Stakeholder Visions For The Future Of California Air Quality Management

March 1999

Prepared by the

California Air Resources Board and the
California Air Pollution Control Officers Association

Air Resources Board
California Air Pollution Control Officers Association

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Dear Air Quality Stakeholder:

We are pleased to forward to you this report: "Stakeholders' Visions For The Future of California Air Quality Management." It describes the results of an extensive strategic planning outreach effort carried out throughout California by the California Air Resources Board and the California Air Pollution Control Officers Association in 1996 and 1997. This report identifies what stakeholders believe are crucial steps for California to take, now and over the decade ahead, to ensure that California's air quality programs continue to be effective.

All parties involved in California's long pursuit of healthful air can take measurable satisfaction in the progress to date -- but we cannot rest on past accomplishments. While Stage One episodes in the South Coast Air Quality Management District decreased from 148 in 1970 to 12 in 1998, California's growing economy and population are clear signals of substantial air quality challenges before us today and in the years ahead. More accurate emission inventories, advances in state-of-the-art control technologies, and greater emission reductions will be required to meet stringent California and federal health-based air quality standards. Stakeholders had strong views on a range of concerns. Key findings described in this report include the belief that California should:

- Carry forward a clear and strong science-based air quality program.
- Reduce regulatory complexity and cost.
- Strengthen air quality public information and awareness programs.
- Continue to involve stakeholders in program development and implementation.
- Pursue emission reductions from sources proportionate to their contribution.

This report also describes a number of the activities now underway that are responsive to or parallel to priorities we heard from stakeholders. We hope you will find the report interesting and informative, and useful in fostering next steps required to assure that California continues to lead the nation and the world in collaborative and effective air pollution control.

Like our stakeholders, we believe air quality management is a serious business. The public's health is at stake. Many challenges are at hand, and the process of adapting to change is ongoing. We are deeply grateful to all Stakeholders who participated in these Forums, and for their contributions to this report. We invite them and all those with a stake in clean air to join us in securing clean air benefits for all Californians. For further information, please contact Jim Schoning, ARB Ombudsman, at (916) 323-2393.

Sincerely,

Alan C. Lloyd, Ph.D.
Chairman
California Air Resources Board

Doug Allard
President, California Air Pollution Control
Officers Association

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Chapter One

OVERVIEW: ARB/CAPCOA AIR QUALITY STAKEHOLDER VISIONING FORUMS

Background

This report provides findings of an unusual assessment of California's air quality system -- its distinctive accomplishments, its strengths and shortcomings, the considerable unfinished work that lies ahead -- and a vision broadly shared by stakeholders of how this system can best continue to meet these challenges. Early in 1996 the managers of California's air quality system asked their stakeholders to assist them in assessing both the system's progress to date and the continuing clean air agenda in California. This request came as the nation's most populous state continued to grow, as its economy, the world's seventh largest, was shifting from recession to fast forward, and as new and stricter federal standards for ozone and fine particulate matter were being promulgated.

Against this backdrop, the California Air Resources Board (ARB) and the California Air Pollution Control Officers Association (CAPCOA) convened a series of nine carefully-structured, day-long strategic planning sessions with their stakeholders throughout California. The meetings were called air quality visioning forums. The first of the series brought the system's managers together on February 29 and March 1, to examine the health and prospects of the system entrusted to them. Their ranks included 33 senior managers of the ARB, which sets emission standards for motor vehicles, fuels and consumer products, and the managers of 22 local air pollution control districts, which regulate stationary sources of pollution. This initial, internal session was followed by eight external stakeholder forums, from April to August, from San Diego to Redding. The forums involved about 380 individuals from over 200 organizations, ranging from citizen, environmental and public health groups to large industry and small business owners and local, state and federal government representatives. Though participants were diverse in orientation, all shared a willingness to help construct a vision of what California's future air quality management system should look like. This report to stakeholders contains their findings -- as well as a number of the activities now underway by regulators which are responsive to or directionally parallel to priorities expressed by stakeholders. The information gathered from the forums is being used by air quality managers in their strategic planning and program implementation efforts.

California's air quality management system is charged with securing clean air for a nation-state that boasts one of the world's largest economies; yet, owing to that prosperity, and the combination of geography and a temperate climate, California also contains seven of the nation's 10 regions whose air quality most frequently violates national health standards. For the managers of this system to succeed, all Californians -- 33 million and growing -- must see themselves as stakeholders. Readers of

this document are encouraged to join the dialogue in pursuit of both healthful air and a healthy economy.

This report is divided into six chapters. This chapter provides a general overview of the purpose of the stakeholder visioning forum process and highlights several key findings that resulted from the forums. Chapter Two describes how the visioning forum process worked, who the stakeholders were, the format of each forum, how information was gathered, organized and characterized, and the process by which managers followed up in response to information that was gathered. Chapters Three and Four present a more detailed summary of what participants said California's air quality mission should be and what primary features -- what "keys to excellence" -- should be carried forward or incorporated into the future air quality management system. Chapter Five presents the "key themes" that emerged after the results of all the forums were combined and evaluated collectively. These themes include major concepts and ideas identified by most forum participants as most critical to California's future air quality management program. Chapter Six presents some of the ways in which air quality managers are considering and responding to information received through the stakeholder forum process. It includes descriptions of current and planned research programs, regulatory streamlining and cost-effectiveness measures being undertaken, programs designed to improve public awareness, and activities being taken to expand stakeholder involvement. Current and planned activities to achieve emission reduction commitments made in the California State Implementation Plan (SIP) are also described. Chapter Seven presents a discussion of promising next steps which can be taken in order to maintain and improve upon the current air quality management system.

Five Appendices are attached at the end of this report. Appendix A provides a master list of all the individuals who participated in the nine forums. Appendix B is an air quality history document that was generated by ARB in the course of conducting the forums. It chronicles key events in California's air quality history that occurred between 1930 and 1996. Appendix C is an Air District Resource Directory that may be used for contacting individual air districts. It provides names, addresses, telephone numbers and web page addresses for each of the air districts. Similar information for contacting ARB is on the inside portion of the back cover of this report. Appendix D is a map of California Air Districts and Counties.

"There's a way to do it better -- find it ."
-- Thomas Edison

Stakeholder Views of the Present

Each forum first examined briefly the events that brought us to the present: five decades of population growth, economic expansion, and environmental, technological and regulatory developments. The two constants were change and growth. We then turned to our first goal: to learn the strengths and weaknesses of the current system, as perceived by our diverse stakeholders. This step in the visioning process served as a system check-up or examination in which stakeholders gave us their diagnosis of the health of the current system. We wanted to know what elements of the system seemed to be functioning properly, as well as what areas were seen as in need of improvement.

Overall, stakeholders concluded that the vital signs of the current system were positive -- and took justifiable pride in the system's accomplishments and distinguished international reputation. Stakeholders generally felt that California's current air quality organizational structure should be maintained; they recognized its ability to provide approachability and accountability, and to foster a positive working relationship between stakeholders and regulators. There was wide recognition by participants of the substantial progress California has made in its efforts to improve air quality -- such as reducing stage 1 smog episodes from 118 in 1975 to 7 in 1996 in the South Coast Air Quality Management District. Stakeholders found numerous elements of the system working well, including: a strong legal foundation that establishes authority, goals, and time-lines for the program; a focus on sound science as the basis for program decisions; establishment of and respect for strong lines of communication among air quality regulators and between air quality regulators and the stakeholders they serve; and a commitment by air quality regulators and stakeholders to the development and advancement of technology.

Not all areas of the air quality system were viewed as healthy. Stakeholders felt some areas of the system warranted improvement. For example, concern was expressed about complexity, prescriptiveness, and numerous burdensome requirements pertaining to permitting, monitoring, record keeping, and reporting. Stakeholders expressed concern regarding the cost of regulations and the need for regulators to re-examine cost-effectiveness considerations in the development of regulations. Although stakeholders identified a strong communication infrastructure as a strength of the current system, many also felt it was an area that could be further improved upon, including the need to strengthen stakeholder involvement in program development and execution, and the need to do a better job of informing the public about California's air quality management program. Stakeholders' assessment of the current system led naturally to the next stage: Identifying the challenges ahead.

Anticipated Challenges

A second goal of the visioning forum process was to obtain stakeholders' views of challenges that will confront the system in the mid-term future (2001-2006). Too often, sudden, unanticipated developments of the moment defy deliberate consideration, and demand prompt resolution, regardless of whether the response is a considered element of the planning process. Conversely, concerns for events decades away are made murky and less compelling when their distance is so great as to frustrate clarity, focus and insight. A horizon of five years seemed sufficiently imminent to command serious attention and still allow sufficient time in order to consider, adopt, and implement such course corrections as appear needed five years hence.

Thus, we asked stakeholders their perceptions of how economic, social, demographic, technological, and regulatory trends will likely shape the working environment for pollution control over the next five to ten years. This question was necessary, in order to next ask stakeholders to help design the air quality system California should have in place some five years hence, to deal in turn with the challenges it would face in ensuing years. Some of the more substantial challenges anticipated by stakeholders included increases in both total population and in the number of persons with little education; advancements in communication technology infrastructure, such as access to the Internet via home computer; further advancements in technology, including emissions control technologies; and the prospect of continuing regulatory prescriptiveness by federal regulators, even as California and the United States find themselves in an expanding and increasingly fierce competitive global marketplace.

Adapting to Change

Our final goal was to identify what sort of institutional changes and qualities California's air quality system will require in order to respond successfully to such challenges. Stakeholders were asked to design such a system, and to recommend what programs, processes, policy approaches, managerial strategies and methods should be in place, circa 2001-2006. While discussion was wide-ranging and spirited, upon careful analysis several key themes emerged with broad-based stakeholder support as critical to California's capacity to continue its successful efforts for clean air and a healthy economy.

The majority of stakeholder participants in the visioning process identified continued reliance on sound science as the most important requirement for the California system's continued success. Sound science was identified as fundamental to maintaining program effectiveness, efficiency and credibility. Advances in technology -- from emissions monitoring to vehicle emission controls -- have been vital to our past success, and will be at least as important in the future. Stakeholders stressed the importance of such critical activities as ensuring complete and accurate databases, from health effects studies to emission inventories and air quality data. Stakeholders also identified the need to develop better quantitative tools and methodologies to measure the effectiveness of future control strategies.

Forum participants -- especially those representing regulated California businesses -- identified reduction of regulatory complexity and cost as two additional areas essential to an improved program. The cost of complying with air quality regulations is an integral part of doing business in California that affects profit margins. The simpler it is for businesses to understand and meet regulations, the easier it is for them to be competitive in a global marketplace in which few other states or nations impose comparable controls. Business stakeholders in particular singled out the need to reduce regulatory duplication among federal, local, and state programs.

Stakeholders across the board stressed the need to improve the general public's awareness and understanding of California's air quality management programs. There was broad agreement on the need for greater public awareness in two critical respects. Greater awareness of the significant progress to date is important to maintaining public support for the yet-to-be-adopted strategies required by the air quality challenges still ahead of us. Stakeholders also believed this greater understanding is needed if individual citizens are to appreciate how

choices they make in their own lives can help to prevent air pollution.

Stakeholder participants recommended that sources be required to reduce their emissions proportionate to their pollution contribution. A broadly-held stakeholder perception was that emission reductions are not being achieved from mobile sources at a rate proportionate to their contribution -- especially when compared with stationary sources of emissions. There was strong support among stakeholders for combining mobile source emission reduction strategies (e.g., transportation alternatives to single occupant vehicles, approaches to reduce vehicle miles traveled, more efficient emissions controls, etc.) with land-use planning considerations to achieve greater mobile source emission reductions. Business stakeholders were especially strong advocates for market-based solutions such as tradeable emission reduction credits that encourage new technology development and result in cost-effective emission reductions.

Participants believe broad stakeholder involvement in the development and implementation of air quality programs is crucial to the programs' success. Pursuit of solutions through consensus-seeking among stakeholders was highlighted as fundamental. Stakeholders identified focus groups, public workshops and working groups as constructive examples of this approach applied to far-reaching policy and program implementation issues. Stakeholders believe such interactions make it possible for regulators to take into consideration the unique needs and perspectives of the affected stakeholders and often produce more effective, equitable and reasonable results -- with shared ownership -- than non-participatory, command-and-control processes.

Hopefully, endeavors such as the visioning process described in this report will continue to bring together Californians who have an ongoing stake in clean air. Experience has shown that such an approach is essential if California's air quality managers are to continue to develop technologically sound, economically viable and socially acceptable air pollution policies and programs. Our current system has served us well, in large part because it has been willing and able to adapt sensibly to changes in its own environment. The need for sensible change is likely to continue -- and the results of the stakeholder forum process have helped to establish a vision, broadly if not totally shared, of what a not-so-distant air quality system and its key components should include. The following pages seek to accurately portray stakeholder perspectives gathered from the 1996-97 visioning forum process. These perspectives are, in large part, being acted upon currently by air quality managers. Many were under way or under consideration prior to the forums. Some are reflected in modifications added to existing programs, and others are being incorporated as new elements of strategic planning processes. Chapter Six of this report provides a partial account of how air quality managers are taking these actions.

Chapter Two

THE AIR QUALITY VISIONING FORUM PROCESS

Background

This chapter describes the process used for the air quality stakeholder visioning forums. It explains who the stakeholders were at each forum, how information was gathered, organized and characterized, and how air quality managers followed up in response to the information that was gathered. Chapters Three and Four provide a more complete account of what participants said about what California's air quality mission should be and what primary features -- what "keys to excellence" -- should be maintained or incorporated into the future air quality management system. Chapter Five presents the "key themes" that emerged after the results of all the forums were combined and evaluated collectively. Chapter Six presents examples of how air quality managers are responding to or working directionally parallel to information received through the stakeholder forum process. Chapter Seven looks ahead at promising next steps which can be undertaken in order to maintain and improve upon the current air quality management system.

"Tell me, I'll forget; Show me, I may remember; Involve me and I'll Understand."
-- Chinese Proverb

Who Are Air Quality Stakeholders?

Two types of forums were held, the initial internal forum, in which only ARB and local air district managers participated, and subsequently, the eight external forums in which stakeholders other than ARB and air district managers were the primary participants. Accordingly, this report refers to stakeholders as internal or external stakeholders. Internal stakeholders are recognized as the air quality managers who are employed by the air quality infrastructure. External stakeholders are typically recognized as the general public, local government, environmental groups and the regulated community -- customers who are served. Predictably, while no stakeholders rushed to speak for more air pollution, general public participants were most often concerned with how clean the air is; the regulated public was usually very concerned with the costs and impacts of regulations on their ability to do business. It falls to air quality regulators to share both concerns, and fashion ways to reconcile the occasional and understandable distance between the general public and the regulated public.

Over 800 stakeholders from across the state were invited to participate in the forums. They were, in effect, the extended family of California air quality -- those most often seen at workshops, regulatory hearings and civic events. Those invited included individual citizen activists and representatives of environmental and public health groups; trade associations, consumer product and automobile associations; the building industry and aerospace companies, agriculture and forestry,

refining companies and utilities; port authorities, transit and planning agencies, and universities; local, state and federal government agencies and elected officials. A few defied categorization or arrived without invitation -- but all were welcome, as all have a stake in the subject. Forum organizers made special efforts to extended invitations to as many viewpoints as was practical and possible. This helped to encourage a fertile cross-exchange of ideas among stakeholders and to remind each of the existence of differing circumstances and diverse points of view.

While every effort was made to achieve balanced participation among the broad interest group categories, business and government stakeholders tended to be a majority at each of the forums. This was not an intentional skewing. Rather, it was a reflection of the large number of business and government stakeholder groups and the relatively smaller number of representatives from the environmental and academic communities that are associated with air quality management in California. No doubt the turn-out also reflected which sectors are able to devote resources -- including human resources, to a full day-long planning session that by design looked beyond immediate issues to the horizon. To address this built in discrepancy in numbers, forum planners made a special effort to involve environmental groups -- often volunteer-dependent -- in the forums. Forum planners called many of them in advance of setting dates for the meetings, and made follow-up calls to encourage their participation. While this did not eliminate the discrepancy in numbers, it likely resulted in broader participation than might otherwise have occurred.

Of the approximately 380 individuals who participated in the forums, 45 percent were representatives of government agencies or elected officials. This result is no surprise, as the internal forum was limited to air quality managers. Another 40 percent were business representatives, about 10 percent were representatives of public health and environmental organizations, and another four percent were academic representatives. One percent were “none of the above” -- and of some other affiliation. These percentages change slightly if calculated without the all-government internal forum participants, although most participants in the initial forum participated in their own local, external forum, and the external forums were joined by representatives of numerous other local, state and federal agencies. Calculated without the initial forum, the business and government sector percentages are reversed to 45 percent business and 40 percent government representatives, respectively. The percentages for the other groups remain constant.

Participants in each forum are listed at the end of Chapters Three (Internal Forum) and Four (External Forums) respectively. Appendix A also provides a consolidated list of all stakeholders who participated in one or more forums.

Stakeholder Visioning Process: Three Phases

The entire stakeholder visioning process occurred in three phases. The first phase sought the views of both internal and external stakeholders, which we refer to as data collection. Data was gathered at nine stakeholder forums around the state. A carefully constructed agenda was prepared in advance, and a structured and facilitated process was used throughout each. The second phase was the data characterization and evaluation phase. Data from each of the forums was reviewed and compiled by air quality managers into 11 key areas of importance (Key Themes). These themes were further refined via a stakeholder survey, in which each forum participant was asked to review the themes, to modify them as needed to accurately portray each participant’s views. They were also asked to rank the five themes of greatest importance for the current and future success of the air

quality system. The third phase was to report back to stakeholders about how ARB and air districts are responding to views expressed by stakeholders. This phase involved three follow-up meetings, one each in Southern, Central, and Northern California. This phase also includes this report.

Phase I — Data Collection at the Forums

Step one of data collection was a one and one-half day internal stakeholder forum involving California's air quality managers. It helped to establish a baseline of common purpose between the state air board and local districts. Additionally, the internal forum provided all participants practical experience with the format in advance of the external forums which followed.

Step two of the data collection process included the eight external forums held throughout California, from San Diego in the South to Redding in the North. Nearly 800 individuals were invited to these forums statewide. Approximately 380 individuals participated, representing a broad cross section of clean air stakeholders -- including environmentalists, business representatives, public health and citizen groups, elected officials, government officials, civic leaders, and air quality managers themselves -- including ARB and air district representatives.

Although limited to one very full day, the format of the forums was otherwise identical to the internal air quality managers forum. Following self introductions by each participant, each forum began by asking participants to reflect on what they considered significant events in the history of both air quality management and society as a whole during the past 50 years. Participants actively charted key occurrences -- from events in nature to scientific discovery, from cultural shifts to political responses -- in each of the last five decades on poster paper stationed around the room. The Air Quality History in Appendix B is a product of these sessions. They then engaged in a brief group discussion of what conclusions could be drawn from observing the past. Stakeholders at most forums concluded that population growth and technological, political, and economic change have been constant for California. This observation led to a second observation: the success of California's air quality management program has in large part been due to the ability of air quality managers and stakeholders to anticipate such factors and to intelligently plan and act accordingly.

Next, participants moved into small, heterogeneous groups of 10 to 20 individuals. Working with a facilitator and recorder, each small group first inventoried the current system's strengths and weaknesses. After an hour of spirited brain-storming and discussion, each group prioritized the top three to five strengths and a like number of weaknesses they perceived in the current air quality management system -- "elements to carry forward or leave behind." Each small group then reported back to the full group what it had identified. Each participant was able to see the substantially common patterns among each group's findings. The results were similar, though not identical, among the forums.

Both air quality managers and external stakeholders recognized as key strengths of California's air program the existence of strong science-based programs; the importance of simplified -- plain English -- regulations; a regulatory development process that is open and inclusive of stakeholder involvement; and the presence of partnerships among air quality managers and stakeholders. Key weaknesses commonly recognized by managers and external stakeholders included overlapping regulatory authority at the local, state, and federal levels; weak air quality public education/outreach emphasis; and need for greater cost-effectiveness in control requirements. Information gathered during this stage of the process was used later by each group as they developed mission statements

and keys to excellence described in Chapters Three and Four of this report. The strengths and weaknesses identified by each small group also became incorporated into the "Key Themes" document and follow-up survey that are discussed in Chapter Five.

After assessing the present system's strengths and weaknesses, participants then returned in their small groups to look to the future -- to identify trends in the working environment, either constraining or enabling, that will bear upon the long-term effectiveness of California's air quality management system. Key trend categories included but were not limited to changes in demographics, economics, science and technology, and politics. Participants returned to the same small groups of 10 to 20 individuals and worked, with facilitator and recorder, for another hour to identify and prioritize the top three to five future trends which system managers should take into account in their planning process. Each group then reported responses back to the large group. Again, there was substantial overlap among break-out groups and among forums regarding key future trends of importance. Key trends identified at both internal and external forums as likely to have an influence California's future air quality management system included continuing population growth, increases in non-English speaking peoples, advancement of information technology, term-limits, and a movement towards more globalized markets.

Each small working group then spent the afternoon producing its own vision of what California's air quality management system should look like by the year 2001, so it would be in the best possible position to carry out the work that will still lie ahead. Stakeholders used the results created earlier in the day regarding strengths, weaknesses, and future trends to help them develop mission statements, identify stakeholders, and recommend ARB and air district programs and services. Again, stakeholder visions and themes are characterized in Chapters Three and Four.

As the final step in the visioning forum data collection process, each small group charted the information developed in the afternoon session on a "Vision Banner." They placed information such as purpose and mission, obligations and opportunities, programs and services, stakeholders, and technologies and policies of the system on the banners. Each of the small groups then rejoined the large group and reported back on the results of their afternoon efforts. Some of the groups performed skits to help express their views in a more enlightening and meaningful way.

Phase II — Data Synthesis and Evaluation

During and after the external stakeholder forum information gathering process, air quality managers began trying to make sense out of what had been collected on the easel pads and rolls of butcher paper. As data from the nine stakeholder forums was assembled and inspected, key themes of importance began to stand out. The process of synthesis and evaluation ultimately had five steps:

1. The first step was to compile the notes from each forum and send them back to stakeholder participants for review and comment. This step helped to assure that the data collected was accurate and complete.

2. As the information was collected, forum managers began organizing it into categories. They also began tracking how often certain comments and themes were expressed. As the forum data collection process neared completion, 11 general program categories of importance emerged. These were characterized and summarized into a document entitled "Summary of Key Themes" (see Chapter Five). The summary identified 11 key themes that emerged

collectively from the nine visioning forums and provided a brief description of what stakeholders said in support of the themes.

3. Once the "Summary of Key Themes" document was complete, it was mailed back, labeled "draft," to all individuals who participated in the forums for their further review and comment.

4. In the same mailing, a "Key Themes Survey" was sent to participants. The survey asked respondents to identify the five themes of greatest importance to ensuring the future success of California's air quality management program.

5. Comments on "Summary of Key Themes" (step 3) were incorporated into the Final Summary.

6. The results of the survey were compiled and the top five themes of importance were identified.

Phase III — Reporting Back to Stakeholders

Air quality managers used information from the forums and the follow-up survey to reassess their programs. After the data was collected, evaluated and prioritized, air quality managers looked back within their respective agencies to determine how their programs measured up against stakeholder perceptions. They assessed how well their programs were structured, how responsive they were being to information gathered at the forums, and what changes, if any, they desired to make in their planning programs to better align with stakeholder views and visions.

Three follow-up meetings were held between December, 1996, and February, 1997 -- one each in the South Coast, in Sacramento, and in the South Central Coast. At the meetings in the South Coast and Sacramento, air quality managers reported back to stakeholders about what was heard collectively at the nine forums. Air quality managers discussed the "Key Themes" document, the results of the follow-up survey, and how ARB and air district managers were being responsive to what was heard at the forums. Further comments were gathered from stakeholders about how they believed California should proceed with the direction of the current system, and with the design of plans for the future. The follow-up meeting in the South Central Coast involved an extended effort by the neighboring Ventura, Santa Barbara, and San Luis Obispo air districts to work with their local stakeholders and define next steps in the refinement of collaborative program planning and implementation efforts.

Chapter Three

MANAGERS' VISIONS

Background

The Air Quality Stakeholders Visioning process officially got under way with an initial one and one half day meeting limited to "internal" stakeholders: 60 ARB and local air district executive managers. They are listed at the end of this chapter. In addition to allowing air quality managers to assess the system in which they operate, the meeting also provided an opportunity to test the facilitated visioning process that would later be used statewide with external stakeholders. This chapter describes some of the outcomes from the internal meeting, including the air quality managers' mission statement and key areas of importance -- or "keys to excellence" -- managers felt were essential for future success. The results of the internal stakeholder meeting were later integrated with those from the external stakeholder meetings, discussed in Chapter Four, to generate a "Key Themes Summary" which is discussed in Chapter Five.

"For every obstacle there is a solution -- over, under, around, and through."
-- Chuck Carlson

Perspectives

On February 29 and March 1, 1996 some 33 senior ARB managers and 27 Air Pollution Control Officers (or their senior deputies) met in Sacramento to consider the evolution, present condition, and future prospects of California's air quality management system. Alternating between full group sessions and small break-out groups, participants were guided through a series of facilitated and recorded dialogues **(**Chapter Two provides a fuller description of how the forum process worked). The managers addressed such questions as:

- What is the mission of California's air quality management system?
- Who are the stakeholders of the system?
- What are the strengths and weakness of the current system? And,
- What programs and services does this system provide, and what changes should it make, in view of changes and trends in the system's own working environment?

Mission Statement

The air quality managers adopted the following statement of their mission:

To work collaboratively to achieve and maintain health-based air quality standards in California. The state should work together with local air districts to deliver

quality programs that:

1) ***Optimize the use of technology and education.***
2) ***Recognize the need for economic balance.***
3) ***Promote acceptance of personal responsibility.***
4) ***Continue evaluation to improve program delivery.***

Keys to Excellence:

Customers and Their Expectations. Air quality managers counted among their customers the general public; the businesses and industries they regulate; others working for clean air, including planners and transit agencies; elected officials, environmental groups, and the media -- and the employees of the air quality system. They recognized that the many diverse customers in the nation-state of California bring with them a multitude of expectations, including:

- Healthful air and good visibility.
- Reasonable, effective, flexible and affordable controls.
- Fair and respectful treatment of those regulated by regulators.
- Clear and understandable information.
- Speedy service and complaint resolution.
- The ability to participate with certainty and accessibility with regulatory decision makers in the processes of developing, implementing and reviewing regulations.

Managers identified the statutory framework established in the federal and California Clean Air Acts as a fundamental strength of California's air quality management system. They credited these laws and the regulatory infrastructure flowing from them as providing clearly defined goals and practices, including the requirements for health and welfare based standards, emission control strategies, and permitting and enforcement requirements. In particular, managers viewed the health and welfare standards required by the federal and California Clean Air Acts as the cornerstones of California's air quality management program. Such standards enable all affected parties to clearly recognize the air quality targets that must be met in order to achieve air quality goals. Clearly defined responsibility between federal, state and local air quality managers for achieving goals was also identified as an important value.

Goals + Sound Science + Skilled People. There was nearly uniform agreement by air quality managers that California's air quality management program is so widely respected today because of its philosophical commitment to leadership and excellence in air quality management. This has included an emphasis on continuing clearly defined goals and practices, science-based programs, recruitment and training of competent professional employees, and a commitment to quality and to continuous improvement of processes and practices.

Another core strength emphasized by air quality managers was credible, science-based programs. This was applied in many contexts, and included reference to accurate health effects data, real-time pollutant exposure data, and pollutant emissions inventory data. Additionally, control technologies and strategies were cited as needing to have a sound science base, with an emphasis on advanced technology and the development of alternative control technologies. Air quality managers stressed the importance of continued support of the research necessary to ensure credible, science-based programs.

The managers recognized that California's role as a national and global leader in air quality depends upon successful recruitment, training, and development of competent professional employees -- another cornerstone of a model air quality program. California's air quality management program has a longstanding commitment to efforts of this kind. Continued commitment by the state of California and local air districts to proficient staff and professional employee development was identified as a valued practice, which is especially important if California is to continue to meet future challenges. Commitment to quality management programs (e.g., user-friendliness, customer satisfaction-based services, and continuous improvement) was identified as another key value essential to a successful program.

A Good Story Needs Better Telling. In a state of 33 million persons and growing, good communication among regulators and between regulators and air quality stakeholders was identified as essential. This value was discussed from many perspectives including the fundamental elements of effective communication: open, honest, and coordinated information-sharing. Air quality managers emphasized the importance of extending communication about regulation development, workshops, and board hearings to include all interested stakeholders. They recognized the need to use communication technologies and tools more extensively, including telephone and video conferencing, televised workshops with public call-in/comment capability, and far greater use of the Internet.

Managers noted that California has made considerable headway in air quality, such as the 58 percent reduction in nitrogen oxides and the 80 percent reduction in hydrocarbon emissions from automobiles to 1970 levels. This occurred despite a 147 percent increase in the amount of vehicles miles traveled annually, from 110 billion miles in 1970 to over 270 billion miles at present. The system's managers nonetheless concluded that continuing this progress will require ongoing public support for the still-unfinished work of providing healthful air for all Californians. It was generally agreed that to maintain broad public confidence and support, California's air quality managers will have to do a much better job of making the public aware of both the progress that has been made to date, and the still daunting air quality agenda ahead.

A critical communications goal identified by managers was telling California's air quality story. This included making the public aware of the present causes and effects of air pollution and of current control strategies. It also included the considerable strides taken in the past to reduce air pollution, and the measurable emission reductions that have resulted. To build upon that success, the managers of the system recognized three critical requirements:

1) Air quality managers must do a better job of enabling individual Californians to understand how their personal choices affect air quality, and how each Californian, as an individual, can help prevent or reduce pollution.

2) Air quality managers should make public education efforts meaningful and forward-looking with the goal of establishing an informed on-going dialogue, over current and contemplated programs, with the general public and identifiable stakeholder groups. To this end, managers should work through media such as the education system's curriculum, print and electronic news programing, direct outreach to schools and community groups, and stakeholder distribution networks.

3) To encourage individuals to accept personal responsibility for reducing emissions produced by their own discretionary actions, air quality managers recognized that they must show the public how other stakeholders are taking responsibility for their emission reductions. Similarly, air quality managers must also publicize thoughtful efforts by local, state, and federal governments to equitably distribute responsibility among stakeholder groups.

Internal Air Quality Stakeholder Meeting (February 29 & March 1, 1996)

FORUM PARTICIPANTS

Doug Allard
Santa Barbara County APCD

Don Ames
ARB

Bob Barham
ARB

Noel Bonderson
Amador County APCD

Gary Bovee
Tehama County APCD

James Boyd
ARB

Richard Bradley
ARB

Tom Cackette
ARB

Bob Carr
San Luis Obispo County APCD

Ken Corbin
Feather River AQMD

Norm Covell
Sacramento AQMD

Bob Cross
ARB

Dave Crow
San Joaquin Valley Unified APCD

Dennis Dickerson
ARB

David Faulkner
Mendocino APCD

Les Fife
Sacramento Valley Basinwide Air Pollution Control Council

Chuck Fryxell
Mohave AQMD

Anne Geraghty
ARB

Lakhmir Grewal
Calaveras County APCD

Peter Hess
Bay Area AQMD

Gary Honcoop
ARB

Roberta Hughan
ARB

Dick Johnson
Placer County APCD

Michael Kenny
ARB

Harry Krug
Colusa County APCD

Michael Kussow
Shasta AQMD

Barbara Lee
North Sonoma APCD

Jim Lents
South Coast AQMD

Bill Loscutoff
ARB

Jerry Martin
ARB

Terry McGuire
ARB

Wayne Morgan
North Coast Unified AQMD

Jim Morgester
ARB

Ron Nunes
ARB

Jim Nyarady
ARB

Sylvia Oey
ARB

Rob Oglesby
ARB

Bill Oslund
ARB

Bruce Oulrey
ARB

Theresa Parsley
ARB

Thomas Paxson
Kern APCD

Cliff Popejoy
ARB

John Powell
Bay Area AQMD

Doug Quetin
Monterey Bay Unified APCD

Bob Reynolds
Lake County AQMD

Ed Romano
Glenn County APCD

Dean Saito
ARB

Mike Scheible
ARB

Jim Schoning
ARB

Genevieve Shiroma
ARB

Dick Smith
San Diego County APCD

Rod Summerfield
ARB

Lynn Terry
ARB

Rick Tomlinson
ARB

Stephanie Trenck
ARB

Peter Venturini
ARB

Barry Wallerstein
South Coast AQMD

Beverly Werner
ARB

Karen Wilson
Sacramento AQMD

Stew Wilson
CAPCAO

Chapter Four

CUSTOMER /STAKEHOLDER VISIONS

Background

This chapter describes findings reached by participants in eight external stakeholder forums that took place from April to August of 1996. The individuals that participated in each of the external forums are listed at the end of this chapter. The external forums followed the internal air quality managers' forum described in Chapter Three. As did the managers, external stakeholders created mission statements and identified areas of key importance to assure a successful air quality program. Chapter Two provides a fuller description of how the forum process worked. Comments received from the external forums were combined with input received from the internal forum to create the "Summary of Key Themes" described in Chapter Five. Chapter Six describes ARB and CAPCOA responses to some of the more important points that were raised at the external forums and re-emphasized via the Key Themes Survey described in Chapter Five.

"The person who makes a success of living is the one who sees his goal steadily and aims for it unswervingly." -- Cecil B. DeMille

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Perspectives

As did the system's managers, participants in each of the eight external stakeholder forums worked their way through a series of facilitated and recorded dialogues. Participants addressed the same questions which were put to the internal stakeholders -- the managers. The questions once again included:

- What is the mission of California's air quality management system?
- Who are the stakeholders of the system?
- What are the strengths and weakness of the current system? And,
- What are, and what should be the programs and services the system provides, in view of changes and trends in the system's own working environment?

Stakeholders indicated that, by and large, they are relatively satisfied with the accomplishments to date of California's existing air quality management system. They cited a well established research program and strong processes for public participation in program development and implementation as important strengths of the existing system, as well as essential ingredients to the system's future success.

Mission Statement

Statewide, there was nearly unanimous agreement that improved air quality is a worthy goal and that Californians want and expect healthful air quality. There was strong agreement that the mission of California's air quality management program is two-fold: to protect air quality and public health, and to foster and preserve a healthy economy. A statewide consolidated mission statement emerged:

> ***To achieve clean air and a strong economy for California through broad-based community involvement, collaborative partnerships, technology and science-based advances, public education, flexibility, innovative strategies, and streamlined, efficient, cost-effective government.***

There was general agreement that California's air quality mission will have to be carried out amidst rapid changes in technology, in our economy, in our social and political fabric, and in our global environment.

Keys to Excellence

Sensible and Cost-Effective Programs. This concept was voiced especially from business stakeholders that participated in the forums; however, over the course of the forum series throughout the state, most stakeholders -- businesses and environmental groups alike -- expressed an appreciation for sensible and intelligent programs that stress cost-effectiveness -- that "get the most bang for the buck." Business stakeholders especially said that they valued emission reduction approaches and regulations that are easy to understand and live by. They expressed a desire for regulations that are fair, equitable, technologically feasible, cost-effective, predictable, simple, and flexible (the last three were often acknowledged as frequently being in conflict with each other). There was a preference by most stakeholders for rules written with a "big picture" frame of reference; rules which take into account multi-media concerns. Again, business stakeholders urged greater uniformity and consistency among regulations, and expressed strong concerns over often duplicative and overlapping regulatory authority.

Most external stakeholders, like the air quality managers, recognized the value of clearly defined goals and results-oriented approaches. The importance of honesty and trust between regulators and those that are regulated was recognized as important. A majority of stakeholders, both environmental and business interests, agreed that when a pollutant source is found to intentionally violate emission standards, penalties should be severe and swift. The desire for a level playing field was often expressed. Stakeholders were also in strong support of performance and market-based incentives to bring about and ensure compliance with air quality regulations.

Streamlined and Automated Regulatory Processes. Stakeholders endorsed regulatory programs that are streamlined and automated. They cited use of the Internet, provision of accessibility via e-mail and toll-free telephones, and computerized remote access permitting. Businesses especially supported self-monitoring and self-inspection compliance programs. Stakeholders frequently emphasized the importance of efficiency and quality as important to the regulatory process.

Partnerships. Stakeholders recognized partnerships as essential ingredients of California's

air quality program. Partnerships were discussed primarily from three vantage points. First, the fundamental of participation: stakeholders want to be part of the process -- more than just token gestures, they want to be seriously involved in both the development and implementation of air programs. Second, inclusiveness: there was a belief that all interested parties should be included in program development and decision making processes such as rule development, workshops and Board hearings and program implementation reviews.

A third advantage of broad involvement occurred to many participants of the stakeholder forum process: many stakeholders acknowledged developing a greater appreciation for conflicting but legitimate points of view held by other stakeholders. Broad participation may have an initial, daunting effect by revealing a multitude of stakeholders and the full magnitude of policy challenges. Conversely, such circumstances are increasingly the norm and underscore the need for creative, win-win-win approaches. Such approaches are more likely to flourish where broad participation stimulates and invites available synergies. As the size and number of policy challenges facing California seem unlikely to diminish, prudent air quality policy makers and managers must harness the synergies that attend those challenges. Key concepts that were heard to this end included: broad-based community involvement, open democratic input to the decision making processes, consensus building, and collaborative solution development.

Another goal identified by stakeholders was to increase cooperation and coordination between all parties, with an emphasis on the concept of shared resources. California's air quality system is a mature one, and many of its stakeholders have learned from their experiences with it. Some have learned that pollution control programs which do not get results may go away, but the underlying air quality objectives will not. While stakeholders, particularly stationary source members of the business community, expressed willingness to pay their fair share for controls, they want those controls to achieve their stated emission reduction goals. Many stakeholders want to work together with government agencies to help design, pay for, and carry out research; to help develop and implement control strategies and regulations. Aware of the critical role of public support for air quality programs, stakeholders also want to identify essential air quality education messages and to help deliver such messages to key public audiences. Additional values cited as important to a successful partnership approach included: honesty, trust, fairness, approachability and accountability. User-friendliness was often cited as an important value, and included elements such as accessibility to staff, customer-oriented processes such as automated remote access and streamlined permitting, and understandable, plain-English, performance-based regulations.

Science-Based Air Quality Programs. Like the participants in the quality managers forum, external stakeholders identified science-based air quality programs as essential to the success of the air quality management program. Again, this included reference to accurate data on health effects, pollutant emissions and exposure, control technologies, and strategy development. Stakeholders encouraged efforts to bring about the advancement of technology in reducing air pollution, with an emphasis on the desirability of partnerships in research and development efforts. They believed such programs should be directed toward performance-based alternatives development, and that a focus should be placed on creating incentives for those who pursue the development of innovative approaches, such as credits for emission reductions via discretionary actions. They expressed the view that advanced technology should be encouraged for both stationary and mobile sources, and managers and stakeholders should be mindful of technology sharing possibilities in such areas as fueling, combustion and

exhaust treatment technologies.

Forum Participants At the Eight External Stakeholder Forums

San Diego Air Quality Stakeholder Meeting (April 29, 1998)

Hosting District: San Diego County APCD, Richard Sommerville, APCO

Alberto Abseu
San Diego Gas and Electric

Craig Anderson
Solar Turbines

Dana Austin
Austin Environmental

Anne Bamford
Hewlett Packard

Bob Barham
ARB

Commander J.C. Brandt
U.S. Navy-CDR Naval Base

Jack Brunton
SDG&E

Dan Buell
National Steel and Ship Building Company

Tom Cackette
ARB

Kim Cresencia
San Diego Gas & Electric

Morris Dye
San Diego County APCD

Paula Forbis
Environmental Health Coalition

Rocky Frost
Automotive Service Council

Terri Ghio
Ligand Pharmaceuticals

Russ Gibbon
City of San Diego

Ron Halik
Nutrasweet Kelco

Adam Hasen
SAI Corp.

Don Hickethier
Sim J. Harris Company

Clay Hinkle
Rohr, Inc.

Alan C. Hurt

Arthur Kneisel
Souther California Edison

Patti Krebs
Industrial Environmental Association

Bill Liberman
Metropolitan Transit Development Board

Rod Lorang
McKenna and Cuneo

Dr. Wendy Longley-Cook
Rohr, Inc.

Julian Medina
Chemtronics Inc.

Steve Nootens
Precision Metal Products

Larry Oberti
UC San Diego

Manuel Puentes
Auto Club of Southern California

Clarissa Reyes
Office of Assemblywoman Denise Ducheny

Shirely Rivera
Resource Catalyst

Ron Roberts, Supervisor
San Diego County

Max Schmidt
Centre City Development Corporation

Scott Vydra
Office of Assemblyman Steve Baldwin

Mike Wang
Western States Petroleum Association

Bruce Warren
San Diego Rock Producers Association

Frank Williamson
NAVISTA Environmental

Dennis Well
Metropolitan Transit Development Board

Glendale Air Quality Stakeholders Meeting (May 21, 1996)

Hosting District: South Coast AQMD, Jim Lents, APCO

Oscar Abarca
South Coast AQMD

Greg Adams
Los Angeles County
Sanitation District

La Ronda Bowen
South Coast AQMD

Jack Broadbent
South Coast AQMD

Tim Carmichael
Coalition for Clean Air

Cody Cluff
Entertainment Industry
Development Corp.

Curtis Coleman
CA Aerospace Environmental
Association

Fabio Escobar
Office of Assemblywoman
Sheila J. Kuehl

Barbara Fry
Air Resources Board

Carol Gomez
Hughes Electronics

Kenneth Green
Reason Foundation

John Greenwood
Coro - Southern California

Lynley Harris
Texaco Refining and
Marketing, Inc.

Jack Heydorf
Architectural Woodworking
Co.

Peter Hidalgo
So. Cal. Reg. Rail Authority/
Metrolink

Deborah Kurilchyk
So. Cal. Edison

Michael Lewis
Construction Industry Air
Quality Coalition

Pat Leyden
South Coast AQMD

Ruben McDavid
Mothers of East Los Angeles

Harry Metzger
Air Resources Board

Dan Monette
Toyota Auto-Body Company
Inc.

Edward Munoz
Hughes Electronics

Nick Nikkila
South Coast AQMD

Chris Norton
Southern CA Gas Company

Barbara Page
Ventura County APCD

Tanya Peacock
Southern CA Gas Company

Carlos Porras
Communities for a Better
Environment

Dave Reed
Chevron U.S.A. Inc.

Larry Rhinehart
South Coast AQMD

Sharon Rubalcava
McClintock, Weston,
Benshoof, Rochefort,
Rubalcava, McCuish

Gail Ruderman Feuer
Natural Resources Defense
Council (NRDC)

Michael Schieble
Air Resources Board

Kenneth Suzuki
Printing Industries Assoc. of
So. Calif.

Erika Vandenbrande
Southern California
Association of Governments

Barry Wallerstein
South Coast AQMD

Bob Wyman
Latham & Watkins

Millie Yamada
Northrop Grumman

Diamond Bar Air Quality Stakeholder Meeting (May 23, 1996)

Hosting District: South Coast AQMD, Jim Lents, APCO

Dee Allen
City of Los Angeles

Susan Ambrose
Orange County
Transportataion Coalition

Mike Appleby
Public Affairs Auto Club

Kim Barone
Office of State Senator Rob Hurtt

Gerald M. Bonetto, Ph.D.
Printing Industries Of California

David W. Brandmeyer
Battelle

Gerald Breitbart
California Restaurant Assoc.

Linda Burks
Office of Riverside County Supervisor Tom Mullen

Dr. William Carter
University of California, Riverside

Janis Christensen
TRW Information Services

David Clock
AQC Environmental Engineers

John Cox
Southern California Economic Partnership

Linda K. Cohu
ARCO Products Company

Lloyd Dixon

Jack Driscoll
Inland Auto Dismantlers Association

John D. Dunlap
Chairman, ARB

Barb Garrett
City of Los Angeles

Amy Glad
Building Industry Association

Dr. Jane Hall
California State University, Fullerton

Doug Hockett
Realtors Committee on Air Quality

Peter Hoffman
Professional Refinishing

Brett Hulstrom
City of Chino

John Hunter
The Irvine Company

Lillian Kawasaki
City of Los Angeles

Terry Keating
University of North Carolina

Kelly Kozuma
Environmental Mediation

John Paul Kusz
Safety-Kleen Corp.

Michael Lewis
Lewis & Company Inc.

Nader N. Mansour
Southern California Edison

Melanie McCann
City of Santa Ana

Wes McDaniel
San Bernardino Association of Governments

Kris McNamara
The Walt Disney Company

Gladys Meade
Coalition for Clean Air

Robert E. Mitchell
Dunn-Edwards Corporation

Robert Mitchell
Valley Environmental Associates

Jeffry Muffat
3M Environmental Engineering

Morna Neelander
GTE Commuter Program

Stuart Oskamp
Claremont Graduate School

Leonard Paulitz
South Coast AQMD

Mark Pisano
Southern California Association of Governments

Cliff Popejoy
Air Resources Board

Skip Ricarte
Safety-Kleen Corp.

John Schwind
Safety-Kleen Corp.

Dr. Russell Sherwin

USC School of Medicine

Jay M. Shipley
Levine-Fricke

David J. Slawson
Eastern M.W.D.

John C. Tryon

Ruthanne Taylor-Berger
Western Riverside Council of Governments

Mark Taylor
Southern California EdisonCynthia Verdugo-Peralta
VPC Energy

Dr. Akula Venkatram
University of California, Riverside

Barry Wallerstein
South Coast AQMD

Larry Watkins
South Coast AQMD

Mike Wang
WSPA

Beverly Werner
Air Resources Board

Ron Williams
Calif. Trade & Commerce Agency

A.L. Wilson
Intergreted Environmental Services

Michael Zimmer
Economic, Environmental and Engineering Service

Santa Barbara Air Quality Stakeholders Meeting (June 3, 1996)

Hosting Districts: Santa Barbara County APCD, Doug Allard, APCO
Ventura County APCD, Dick Baldwin, APCO
San Luis Obispo County APCD, Bob Carr, APCO

Forum Participants

Doug Allard, APCO
Santa Barbar County APCD

Jim Anderson
Unocal 76 Products Company

Nikki Ayers
Automotive Services Council

Richard H. Baldwin, APCO
Ventura County APCD

Dr. Janet Baas
So. Calif. Edison

Larry F. Bligh
GTE Telephone Operations

Jana Dawn Bott
Western Commercial Space Center

Peter Cantle
Santa Barbara County APCD

Charles W. ("Charlie") Cappel
COLAB

Robert W. Carr, APCO
San Luis Obispo County APCD

Marc Chytilo
Environmental Defense Center

Connie Clay
Office of Ventura Supervisor Judy Mikels

Mario J. de los Cobos
Southern CA Gas Company

Jack Dewar
J. B. Dewar, Inc.

Maxine Dewbury
Procter & Gamble/APCO Advisory Committee

Dr. Janet Dillon, Esq.
Janet Dillon & Assoc./Eco-Partners

David W. Dixon
San Luis Obispo County APCD

Mark Eckenrode
Minerals Mgmt. Services
U.S. Department of Interior

John Ewan
Env. Center of SLO County

Roger Funston
California Independent Petroleum Association

William D. Gillette
Santa Barbara County Ag. Commissioner's Office

Vivian Goo
NAWS Pt. Mugu

Stan Green
Citizens to Preserve the OJAI

Jill Grant
Santa Barbara Industrial Association

Eric Greening
San Luis Obispo County Citizens Transportation Advisory Committee

Jeanne Harvey
League of Women Voters of Ventura

Sara Head
ENSR

Jim Heggarty, Chair
SLO County APCD,

Bill Hicks
R.E. Barber Ford/Isuzu

Frank Holmes
Western States Petroleum Association

Gary Honcoop
ARB

Michael W. Kuhn
Ventura County Air Pollution Control District Advisory Committee

Tom Leese
American Lung Association of Ventura County

Randy Livingston
PG&E

Gerry Lorden
Association of Governments of Santa Barbara

Diane Masseth-Jones
American Lung Association

Timothy Mahoney
Santa Barbara Industrial

Association

Reese Martin
South Coast Gas Company
John Masterson
R.E. Barber Ford/Isuzu

Kathy Milway
Santa Barbara County Air
Pollution Control District

Lee Moldaver
Audubon Society of Santa
Barbara

Neil Moyer
Environmental Coalition

Ram Natesh
Santa Barbara County
Economic Development

John Patton
Santa Barbara County

Dr. Lisle Reed
Minerals Mgmt. Services
U.S. Department of Interior

Bradley Smith
League of Women Voters

June Sochel
Citizens Planning
Association and Foundation

Mike Stubblefield
Sierra Club

Lynn Terry
ARB

Ronald Thompson
Unocal 76 Products Company

Mike Tollstrup
Air Resources Board
Col. Louis D. Van Mullem
USAF - Vandenburg AFB

Thomas A. Umenhofer
Sierra-Pacific Environmental

Tom Urbanske
County of Santa Barbara
Board of Supervisors

Mike Villegas
Ventura County Air Pollution
Control District

Debbie Weeks
Amer. Lung Assn. of Santa
Barbara

Kevin U. Wright
Torch Operating Co./
Coalition of Labor,
Agriculture and Business/
Santa Barbara County APCD
Community Advis. Council

Redding Air Quality Stakeholders Meeting (June 12, 1996)

Hosting Districts: Butte County AQMD, Larry Odle, APCO
North Coast Unified AQMD, Wayne Morgan, APCO
Shasta County APCD, Mike Kussow, APCO
Tehama County APCD, Heidi Hill, APCO

Forum Participants

Laura Baker
League of Women Voters of Redding Area

Ross Bell
Simpson Paper Company

Juan Bernardino
J.F. Shea

Craig Bishop
Santa Fe Pacific Pipe Line Partners

Paul J. Bolton
Shasta County Planning Division

Janette Brooks
Air Resources Board

Carol Burke
Pacific Gas & Electric Co.

Spencer Clifton
Humboldt County Association of Governments

Nancy Diamond
North Coast Unified AQMD, Hearing Board

Richard Dickerson, Supervisor, Shasta County District 1

James Ellison
Calaveras Cement Co.

Mike Mitzel
Sierra Pacific Industries
Les Dutro
Farmer

Lance Frederiksen
Shasta Business Council

Julie Fulkerson, Supervisor, Humboldt County

James Gaumer
Baldwin Contracting Co.

Kirk Girard
Louisiana-Pacific Corporation

Ron Greenberg
Schuller International, Inc.

Patrick Griffen
Siskiyou County APCD

Edward Jablonowski
Tenneco Packaging

Barbara Kelly
League of Women Voters of Humboldt County

Jim King
City of Redding

Scott Lieby
Sierra Pacific Industries

Bob McLaughlin
Butte County AQMD

Martin J. Mcfadden Jr.
Pacific Energy/Pacific Wood Fuels

William N. Morris
Koppers Industries, Inc.

Russ Mull
Shasta County Department of Resource Management

Ernie Perry
Del Norte County Community Development Dept.

John Plantin
Simpson Timber Co.

Stan Plowman
Trinity County Supervisor
North Coast Unified AQMD

John Prevost
Pacific Lumber Company

Sharin E. Shelton
Vintage Petroleum

Ronald Jay Stewart
St. Elizabeth Community Hospital Respiratory Dept.

John Stokes
Regional Transportation Planning Agency of Redding

Kathy J. Thomas
Tehama County Department of Building and Safety

Terry A. Trumbull
American Lung Association of Santa Clara

Janet S. Tyrrel
League of Women Voters

of Redding Area

Rene Vercruyssen
Baldwin Contracting
Company, Inc.

Barbara Vlamis
Butte Environmental Council

Beverly Werner
Air Resources Board

Gail Williams
Butte County AQMD

Jim Zauher
Shasta Economic
Development
Corporation

Fresno Air Quality Stakeholders Meeting (June 26, 1996)

Hosting Air District: San Joaquin Valley Unified APCD, Dave Crow, APCO

Forum Participants

Carla Arnold
Builders Concrete

Mark Boese
San Joaquin Valley Unified APCD

Chris Burger
Klein, Wegis

Bob Barham
Air Resources Board

Anita Burke
Texaco U.S.A

Carol A. Ciszek
Kraft Foods, Inc.

Les Clark
Independent Oil Producers Association

Wayne Clark
San Joaquin Valley Unified APCD

John Courtis
Air Resources Board

Manual Cunha Jr.
Nisei Farmers League

Sam Duran
Texaco

Diane Ewell
U.S. DI/NPS Sequoia and Kings Canyon National Parks

Barbara Goodwin
Fresno County Council of Governments

David Harrald
Kaweah River Rock Co., Inc.

Dan Jernigan
Chevron, U.S.A.

Dave Jones
San Joaquin Valley Unified APCD

Dave Jones
Association of General Contractors

D. Allan McCuen
Caltrans

Terry McGuire
Air Resources Board

Greg Meisinger
Cal Resources Limited Liability Corp.

Jay Norvell
Caltrans

Jill Reed
Ogdem Martin Systems

Peter J. Ruggerello
Fresno Area Permit Assistance Center

Arthur Unger
Sierra Club

Linda Urata
Project Clean Air

Todd Wong
Air Resources Board

Dave Warner
San Joaquin Valley Unified APCD

Bay Area Air Quality Stakeholders Meeting (July 24, 1996)

Hosting Air District: Bay Area AQMD, Ellen Garvy, APCO

Forum Participants

June Anderson
IBM Environmental Program

Jon Ballesteros
Bay Area AQMD

Suzanne Belleci
State Senator Nicholas C. Petris Office

Bill Binder
Thermatrix Inc.

Jan Bush
Bay Area AQMD

William Carroll
Supervisor Solano County

Clair Chapin
CCS Environmental

Larry Chaset
Bay Area AQMD

Fred Cooper
Fred Cooper Environmental

Paul Craig

Bob Cross
Air Resources Board

Mike Daley

Bill DeBoisblanc
Bay Area AQMD

Michael DeLeon
Tosco Refining Company, Avon Refinery

Joan Denton
Air Resources Board

Dan Donohoue
Air Resources Board

John D. Dunlap, Chairman
ARB

Kay Faryam
U.S. Navy

Milton Feldstein
Former APCO
Bay Area AQMD

Scott Folwarkow
Western States Petroleum Association

Ellen Garvey, APCO
Bay Area AQMD

Jim Guthrie
Bay Area AQMD

Greg Harper
Bay Area AQMD

Steve Heminger
Metropolitan Transportation Commission

Peter Hess
Bay Area AQMD

M. Patricia Hilligoss
BAAQMD/ARB/
Mayor of Petaluma

Eric Hinzel
Radian International LLC

John Holtzclaw
Sierra Club

R.L. Jacoby
Shell Martinez Refining Co.

Jane Kelly
Union of Concerned Scientists

Bruce Kern
Economic Development Alliance For Business

Teresa Lee
Bay Area AQMD

Karen Licavoli
American Lung Association of San Francisco & San Mateo

Curtis Lindskog
EMCON

Bill Lockett
Air Resources Board

Steven McCullough
EMCON

Carolynn McIntosh
Chevron - Richmond Refinery

John F. McKenzie
Pacific Gas & Electric

Paul Okamoto
Bay Area AQMD Advisory Council &
Okamoto Saljo Architecture

Tom Peradi
Bay Area AQMD

Dan Phelan
Bay Area League of Industrial Associations

Brian Runkel

California Environmental
Business
Council

Ceil Scandone
Association of Bay Area
Governments

Joe Slamovich
Bay Area AQMD

Bill Sylte
Woodward - Clyde
Consultants

Marcus Taylor
URS Consultants

SuzanneVetreno
The Clorex Company

Sacramento Air Quality Stakeholders Meeting (August 19, 1996)

Hosting Districts: Sacramento Metropolitan AQMD, Norm Covell, APCO
Yolo-Solano AQMD, Larry Greene, APCO
Placer County APCD, Dick Johnson, APCO
El Dorado County APCD, Ron Duncan, APCO
Feather River AQMD, Ken Corbin, APCO

Forum Participants

Ron Allen
Hunt-Wesson, Inc.

Don Ansley
PG&E (Auburn)

Lowell Ashbaugh
Crocker Nuclear Labratory
U.C. Davis

Terry V. Bassett
Yolo County Transit Authority

David M. Blicker
Hearing Board, SMAQMD

Spencer Bole
County of Sacramento

William S. Bradley
El Dorado County Board of Supervisors

Tom Cahill
Air Quality Group

John Carroz
Placer County APCD Advisory Committee.

Les Chan
California Department of General Services

Martha Paterson-Cohen
Sacramento Housing & Redevelopment Agency

Norm Covell, APCO
Sacramento Metro AQMD

Bob Cross
Air Resources Board

Dennis C. Decota
California Service Station & Automotive Repair Association

Ron Duncan, APCO
El Dorado County APCD

Mena Earnest
Campbell Soup Company

Don Erickerson
Yolo-Solano AQMD

Les Fife
Sacramento Valley Air Basin Control Council

Tony Fisher
NUMMI

Loyd Forrest
Rice Alternatives Committee

Susan Gamage
NEC Electronics Inc.

Larry Greene, APCO
Yolo-Solano AQMD

Linda Hafar
California State University, Sacramento

Jane Hagedorn
American Lung Association
Sacramento-Emigrant Trails

Mike Hoffacker
Sacramento Area Council of Governments

David Huff
BC Stocking Distributing

Jim Humphries
Sacramento County

Roland Hwang
Union of Concerned Scientists

Paul Jacobs
Air Resources Board

Carol Johnson
JHME

Dick Johnson, APCO
Placer County APCD

Debbie Jordan
U.S. EPA, Region 9

Michael Kashiwagi
City of Sacramento

Andy Kingsbury
California State University, Sacramento

Jack Lagarias
ARB Board Member

Marianne Lee
California State University, Sacramento

Doris Lo

U.S. EPA, Region IX

Marcella McTaggart
NEC Electronics Inc.

Kathleen Mead
Environmental Council of Sacramento

Nancy Moorhouse
A. Teichert & Son, Inc.

Tim Murphy
State Senator Tim Leslie's Office

Mark Nelson
Hewlett-Packard Co.

Roger W. Niello
Niello Auto Group

Eric Palson
Yolo County Farm Bureau

Suzanne L. Phinney
Aerojet

Jeff Pulverman
Caltrans

Bruce Roberson
Senator Leroy Greene's Office

Christine Schaufelberger
Bay Area AQMD

Rich Scollay
Procter and Gamble

Robert Sherry
Sacramento County Planning & Commercial Development Department

Kenneth D. Smith
Jacobs Engineering Group

Muriel Strand
League of Women Voters of Sacramento

James W. Stratton
California Department of Health Services

Tim Taylor
Sacramento Metropolitan AQMD

Kathleen Tschogl
Raley's-Bel Air Markets

Matt Todd
Solano Transportation Authority

Betty Turner
American Lung Association
Sacramento Emigrant-Trails

Dr. Patricia Velasco
Air Resources Board

Kay Valler
Placer County Air Pollution Control Advisory Committee

Brian Williams
Sacramento Transportation Authority

Stew Wilson
CAPCOA

Lois Wright
SMUD

Richard A. Yehle
U.S. Postal Service

Chapter Five

CONSENSUS VIEWS: KEY THEMES COMMON TO MANAGERS AND CUSTOMERS/STAKEHOLDERS

Background

As discussed in previous chapters, the visioning forum process was used once with the "internal" air quality managers, and at eight separate meetings around the state with the "external" air quality stakeholders/customers. There was substantial agreement among the nine forums in terms of what individuals said about the mission of the system and keys to excellence. Eleven themes emerged as areas of importance to most forum participants for the future success of California's air quality system.

These themes were condensed into a document entitled "Summary of Themes" which is discussed in this chapter. The summary was sent to all forum participants for their further review. In addition, a survey was enclosed, requesting that each participant rank what s/he considered to be the five themes most critical to the future success of the air quality management system. ARB and CAPCOA actions in response to the top five themes are discussed in Chapter Six.

"One can never consent to creep when one feels an impulse to soar."
-- Helen Keller

Key Themes

Although stakeholder input from the one internal and eight external forums was far reaching and varied from one location to the next among the broad cross-section of participating stakeholders, certain concepts and points of view were heard with greater frequency and were assigned importance accordingly as data was reviewed for patterns and themes. When the input from the entire air quality stakeholder forum series was carefully examined, 11 broad categories, or themes stand out. These were:

- Carry forward clear and strong science-based air quality standards.
- Reduce regulatory complexity and cost.
- Strengthen air quality public information and awareness programs.
- Continue and expand involvement of stakeholders in the program development and implementation process.
- Pursue proportionate emission reduction responsibility.

- Improve regulatory consistency.
- Move towards greater reliance on market-based control programs.
- Continue to build upon strong business assistance/compliance assistance programs.
- Maintain the use of technology-forcing standards.
- Increase reliance on quality management and customer service in all air quality management programs.
- Strengthen the communication/information technology infrastructure.

Summary of Key Themes

The 11 Key Themes identified by stakeholders are more fully characterized below. The top five are ordered according to the importance stakeholders assigned to them in a follow-up survey. Further discussion of these themes is presented in Chapter Six on actions ARB and CAPCOA are taking or plan to take to be responsive to them. The final six themes listed below are in random order.

Theme One: Carry Forward Clear and Strong Science-Based Programs. Stakeholders made their top priority continued reliance on science-based decision-making to provide for rational public policies that promote healthful air quality. With virtual unanimity, they emphasized the need to educate air quality policy makers about the importance of using science as a fundamental determinant for establishing effective policies. Stakeholders expressed concern that non-scientific political considerations may undermine the effectiveness of a science-based approach. Stakeholders broadly believed that the use of sound science by policy/decision-makers strengthens the credibility of the air quality management system and provides a greater assurance of program effectiveness and efficiency.

Since effective planning presumes the availability of valid scientific data upon which to base assumptions, stakeholders stressed the importance of updating the emissions inventory and associated air quality models regularly in order to produce the best statements of actual emissions and cost-effectiveness possible. The results of the scientific data should also be used to strengthen the process by which the effectiveness of current control strategies is determined, and to develop the tools --such as modeling and other measures of air quality improvement -- necessary to evaluate the effectiveness of future control strategies once they are in place.

Theme Two: Reduce Regulatory Complexity and Cost. Stakeholders -- especially those representing business -- expressed concern that air quality regulations are often too complex, extremely technical, and too costly to comply with. They wanted a streamlined regulatory process with fewer regulatory authorities, less duplication, and simplification of the permitting process. Business stakeholders felt that reducing regulatory complexity would make regulations more understandable, and produce greater compliance while reducing costs from regulations. They expressed a desire for regulators to select control options which meet the test of cost effectiveness for associated emission reduction benefits.

Stakeholders generally felt that California's current air quality organizational structure should be maintained. They recognized its ability to provide approachability and accountability, and to foster a positive working relationship between stakeholders and regulators. Stakeholders believed that local stationary sources should be regulated by local air districts that are familiar with their

unique characteristics and circumstances. Stakeholders said the ARB should continue to have the authority and responsibility for regulating motor vehicle emissions, fuels, air toxics, and consumer products.

Theme Three: Strengthen Air Quality Public Information/Awareness Programs. Stakeholders want regulators and stakeholders to work together to do a better job of telling California's "Air Quality Story." There was a widely held belief that this would foster a greater understanding by the general public. Stakeholders believed that the significant progress in air quality should be emphasized together with continuing challenges and future strategies. There was a broad-based, explicit desire to stress the importance of the personal responsibility of each Californian in reducing air pollution.

Theme Four: Continue and Expand Involvement of Stakeholders in the Program Development and Implementation Process. Stakeholders supported utilization of stakeholder focus groups and workshops for addressing issues and developing and refining strategies associated with air quality management. Stakeholders recognized these methods as useful for bringing together a variety of interested parties, affording opportunities for diverse perspectives to be heard, identifying areas of common agreement, and designing workable solutions and programs that are sensitive to stakeholder needs. Development of solutions through collaborative partnerships was another recognized benefit of expanding stakeholder involvement.

Theme Five: Pursue Proportionate Emission Reduction Responsibility. There was broad agreement among stakeholders on the need to obtain air pollution emission reductions in proportion to the contributions from the source in order to achieve the overall goal of healthful air. There was a desire for fairness and equity in air pollution control that does not grant certain source types special treatment. Many stakeholders believed that mobile source emission reduction strategies (e.g., transportation alternatives to single occupant vehicles, approaches to reduce vehicle miles traveled, more efficient emissions controls, etc.) should be incorporated into land-use planning decisions. In particular, stakeholders felt emission reductions from mobile sources were not being achieved in proportion to the emissions currently attributed to them.

Other Themes:

Improve Regulatory Consistency. Stakeholders, particularly those in the business sector, felt that inconsistency in the application of regulations is inherently inequitable and can result in one party being adversely impacted while others are benefitted. An example would be differing methods used by two adjacent air districts to calculate emissions -- followed by the adoption of differing emission control requirements. There was a desire for a fair regulatory system that provides correct and consistent interpretations of regulations. Stakeholders believed that all regulatory agencies should work to improve upon consistency in this area. They believed that improving communication and cooperation between and among regulatory agencies is essential to this end. Stakeholders also acknowledged the importance of adequate training of staff and the importance of providing guidelines with sufficient clarity to minimize inconsistent regulatory behavior. Most stakeholders believed that this consistency need not come at the expense of flexibility.

Move Towards Greater Reliance On Market-Based Control Programs. Stakeholders -- especially businesses -- supported a greater reliance on market approaches such as emissions

trading programs, environmental labeling programs, and tax incentives to achieve emission reductions. They recognized the greater efficiency and flexibility that might be offered by such approaches. While many stakeholders supported the adoption of market approaches in place of prescriptive command-and-control approaches, all stakeholders recognized the importance of maintaining accountability and enforceability in any air quality management program.

Continue and Build Upon Strong Business Assistance/Compliance Assistance Programs. Stakeholders supported the continuation and augmentation of business and compliance assistance programs that ARB and many air districts provide. These programs help businesses to better understand regulatory and permitting requirements, and to obtain regulatory approvals and achieve compliance. Important elements recognized by stakeholders included customer assistance help lines, permit assistance (including assistance on the Internet), financial assistance, compliance assistance training, and an Ombudsman program. Business stakeholders stressed the need to make programs as simple and user friendly as possible.

Maintain the Use of Technology-Forcing Standards. Stakeholders supported the use of technology-forcing standards for the development and commercialization of clean air technologies. They supported stringent health-based air quality emission standards as a powerful means to produce technological improvements. Examples include cleaner fuels, low emission vehicles, and advanced stationary source emission controls. Stakeholders recognized that emission reduction standards that are seemingly unattainable using existing technologies are often met when the creativity and ingenuity of the market-place are allowed to function. Business stakeholders stressed the importance of cost-effectiveness considerations in adopting control technologies.

Increase Emphasis On Quality Management and Customer Service In All Air Pollution Management Programs. Stakeholders felt that the commitment by air quality managers to quality management (e.g., program planning, assessment, and improvement) should be strengthened. Stakeholders encouraged the use of strategic planning processes to establish goals, strategies, and time lines. They emphasized the need to periodically evaluate and assess how well each program is achieving its goals. They stressed the importance of incorporating performance measures into strategic plans that take into account not only emissions reductions and air quality improvements, but the views of stakeholders in assessing program effectiveness and customer satisfaction. Stakeholders supported air quality manager's commitments to continuous improvement in customer service and quality management training programs for managers, and such customer assistance programs as help lines and web pages.

Strengthen the Communication/Information Technology Infrastructure. Stakeholders emphasized the need to pursue Communication/Information technology opportunities such as the Internet, including the use of computers, satellite down-links to classrooms, and electronic transmission of data, voice, and video images to home television sets. Stakeholders believed that California's air quality system should position itself to take full advantage of communication and information technologies as they become available. Stakeholders recommended that regulators make greater use of these technologies to share information effectively and efficiently among themselves and with their stakeholders. Many believed that permitting, workshops, and even the public hearing process will soon be conducted in interactive form over the Internet.

Stakeholder Priorities

The 11 key themes listed above were compiled into a document entitled "Stakeholder Key Themes." This document, together with a prioritization survey, was sent to the nearly 380 stakeholders who participated in the visioning forum process. Participants were asked for final comments on the "Stakeholder Key Themes" document. The accompanying survey asked them to list, in order of importance, the five themes they deemed most crucial to the future success of California's air quality program. When the responses were tallied -- approximately 220 -- the top five priorities were:

Key Program Elements Prioritized by Stakeholders

- Continue Clear and Strong Science-Based Programs
- Reduce Regulatory Complexity and Cost
- Strengthen Air Quality Public Information/Awareness Programs
- Continue and Expand Stakeholder Involvement
- Pursue Proportionate Emission Reductions

Chapter Six describes actions that are under way, in development or under consideration that are responsive or directionally parallel to these top five stakeholder priorities.

Chapter Six

ACTION OUTCOMES: RESPONDING TO STAKEHOLDER VISIONS

Background

Chapter Five described the feedback collected from the internal and external stakeholder forums. This data was condensed into a "Key Themes" summary, which was then sent to the approximately 360 stakeholders who participated in the forums. Recipients of the summary were asked to rate the top five themes of importance to the future success of clean air in California. Their five top priority themes were:

- Continue Clear and Strong Science Based Programs
- Reduce Regulatory Complexity and Cost
- Strengthen Air Quality Public Information/Awareness Programs
- Continue and Expand Stakeholder Involvement
- Pursue Proportionate Emission Reductions

ARB and CAPCOA managers reflected upon those actions already under way and those plans under consideration which seemed either directly responsive to or directionally consistent with these five key themes. These actions and plans were shared in three follow-up forums with stakeholders that occurred in Los Angeles and Sacramento in December, 1996, and in Santa Barbara in February, 1997. The five themes and some ARB and air district actions being taken in response to them are discussed in this chapter.

It is beyond the scope of this report to provide a more complete description of actions and plans under way in each of the 35 local air districts. For further information on individual air district activities, the reader may contact individual districts listed in Appendix C -- "Air District Resource Guide."

"***Man's mind, once stretched by a new idea, never regains its original dimensions."***
-- Oliver Wendell Holmes

Theme One: Continue Clear and Strong Science-Based Programs

Sound science -- accurate and complete data for the myriad of air programs addressed by ARB and air districts -- was identified by stakeholders as the foundation which supports the authority and integrity of California's present air quality system. Since many of the tasks of

emission reduction have been accomplished -- the 'low-hanging fruit' has been harvested -- a strong scientific foundation is viewed as more critical than ever, as regulators consider how best to implement and attain new National Ambient Air Quality Standards for particulate matter (PM) and ozone. Typical science-based strengths stakeholders associated with California's air quality management system included thoughtful and well laid out research programs, comprehensive air quality monitoring systems, and innovative technology development programs. Concerns expressed by some stakeholders included: the need for better planning and funding mechanisms to identify and meet research and development needs; additional research to strengthen the emission inventory; improved science to determine the relative importance of chemical precursors to ozone formation; improved science to characterize the health effects of particulate matter; and improved coordination between stakeholders and government agencies in the development of control technologies.

Sound science is essential equipment for the careful regulator who must maintain credibility with the public health community and the regulated community. A shared respect for sound science enables diverse stakeholders to embrace an air quality agenda that includes more accurate health effects studies, more protective air quality standards and greater emission reductions -- so long as that agenda does not shrink from the importance of more accurate emission inventories and more cost-effective strategy analysis. Neither the regulated community nor thoughtful public health advocates are served by the adoption of control programs which miss their mark and either fail to achieve their stated goals or operate at a cost well in excess of expectation upon adoption.

Key elements of ARB and CAPCOA's science programs which are responsive to stakeholder comments are listed below:

- **ARB holds research planning and development workshops annually.** The workshops, initiated in 1996, enable ARB to share research efforts, explore joint ventures, and to receive public comments on contemplated ARB research projects, priorities and findings.

- **ARB annually updates its air pollution research plan.** This plan addresses research into air quality issues and regulatory needs. It lays out research priorities for each year and recommends how ARB's approximately $3 million dollar research budget should be allocated. The primary areas of research include health effects studies, regional air quality studies (emission inventory development, air quality measurement, pollutant transport, transformation and fate), emission controls, and air quality management economic impact studies. Some of the key research areas include:

  -- **Continuation of the Children's Health Effects Study.** This three-part study began in 1992. It is in its third phase and has studied over 3600 school-age children from grades four, seven and nine in 12 communities with differing air pollution patterns. Quantitative information will be obtained regarding which pollutants at what levels of exposure, over what time frames, are associated with specific health effects. The study is scheduled for completion in 2002.

  -- **The 1997 Southern California Ozone Study (SCOS97).** This study is examining the formation and transport of smog and particulate matter in the Southern California region. The data from the study are now being compiled and analyzed in order to develop a better understanding of the complex meteorological and chemical processes

taking place in the southern California region so that the most cost-effective route toward attainment of ozone and PM standards can be determined.

-- **The Nitric Oxide Health Effects Study.** This study is an investigation of the cellular/biochemical basis, and extent of nitric oxide-caused health effects in human and animal subjects.

-- **The Zero Emission Vehicle (ZEV) Market Forecast Study.** This study helps determine how manufacturers will comply with the 10 percent ZEV sales requirement in 2003.

-- **The Fuel-Cycle Emissions Analysis and Equivalent Zero Emission Vehicle (EZEV) Certification Standard Study.** This study refines estimates of fuel-cycle emissions that will result in use of diesel, liquefied petroleum gas, and methanol vehicles in the South Coast Air Basin. Quantifying these emissions is essential to the establishment by ARB of an EZEV certification standard.

-- **The Heavy-Duty Evaporative Emissions Evaluation Study.** This study quantified evaporative emissions from gasoline-powered trucks. The results are being used to assess the relative benefits of exhaust or evaporative emission control strategies.

- **ARB is planning how to implement EPA's new Air Quality Standards.** Working with U.S. EPA and others, ARB is identifying necessary research needed to characterize sources, emissions, and effects of pollutants before implementation of the standards can occur. Examples of research efforts to this end are being carried by a series of partnerships that include ARB, the San Joaquin Valley Air District, U.S. EPA, U.S. Department of Defense, USDA, and industry sponsors including agriculture, utilities, and petroleum. Studies include:

  -- **San Joaquin Valley Air Quality Ozone Study.** An $18 million program, this study provides the tools needed by decision-makers to develop sound control plans. It is often recognized as one of the best air quality studies ever conducted.

  -- **California Regional PM10/PM2.5 Air Quality Study.** A continuation and follow-up study of the highly successful ozone program, the $27.5 million program was initiated in 1992 with the encouragement of the agricultural community.

    -- **Health Effects Studies Using a Mobile Particle Concentrator.** This project will establish and operate a mobile PM concentrator facility to define the health effects of California PM exposures in human volunteers and animals.

  -- **Physical and Chemical Characterization of Size-Segregated Particulate Matter Emissions from Gasoline- and Diesel-Powered On-Road Motor Vehicles.** This study will develop appropriate methods for sampling the entire size domain of gasoline- and diesel-fueled vehicle PM exhaust emissions under conditions that are representative of those that PM exhaust emissions experience in the atmosphere.

  -- **Particulate Matter from Tire and Brake Wear of On-Road Vehicles Study.** This study will help determine the gram-per-mile particle emission rate from tire and

brake wear, the particle size distribution in these emissions, and the influence that different driving patterns may have on particulate emissions.

-- **Vegetative Burning Health Impacts Study.** This study will assess the degree to which smoke from the burning of rice residue and other vegetative matter affects human health.

- **The ARB updates its Research Plan on an annual basis** and issues Requests for Proposals (RFPs) for research into the causes, consequences and development of solutions to air pollution. Proposals are added to the Research Plan upon approval.

- **ARB solicits stakeholders on their ideas about research projects**, and invites stakeholders to submit proposals for research. Stakeholders may submit research proposals to the ARB at any time. The Board considers the staff's proposed Research Plan for approval each year at its May board meeting. Some key additional future (1998/1999) research areas include:

  -- **Quantification Methods for Seasonal Public Education Programs.** The objective of this contract is to develop a reliable and cost-effective methodology for quantifying the emission reductions of seasonal and episodic public education programs.

  -- **Demonstration of an On-Board NOx Sensor for Heavy-Duty Diesel Vehicles.** This project shall select, calibrate, and demonstrate two types of fast-response oxides-of-nitrogen (NOx) sensors for use in providing accurate, real-time measurement of exhaust gas NOx emissions from on-road, four-stroke cycle, heavy-duty diesel engine-powered vehicles.

  -- **The Life-Cycle Assessment of the Environmental Impact of Electric Vehicles and Internal Combustion Engine Vehicles.** The purpose of this project is to compare impacts to air, land, and water that are associated with the manufacture, use, recycling and disposal of conventional and electric vehicles. Qualitative assessments of the environmental and health impacts of each vehicle technology will be included.

  -- **Examination of Alternative Technologies for Wood Furniture Stripping Operations; Characterization of Methylene Chloride Uses in California.** This study will assess the emissions of methylene chloride from methylene chloride-based furniture stripping operations and alternative stripping formulations or control technologies.

  -- **The Indoor Air Quality and Personal Exposure Assessment Program.** This program provides fact sheets on formaldehyde and combustion pollutants in the home. More fact sheets are added as they are published.

  -- **The Innovative Clean Air Technologies Program (ICAT).** This program helps support the development and demonstration of innovative technologies designed to increase the efficiency of existing air pollution prevention and control technologies, increase their cost-effectiveness, or develop new cost-effective alternatives. Requests for Proposals (RFP's) for ICAT projects are issued annually prior to the beginning of each fiscal year to allow for a complete and thorough review cycle. The RFP for

1998-99 is closed.

- **ARB's Reactivity Scientific Advisory Committee held its first meeting in February 1997**. The Committee, which is made up of independent scientists outside of the ARB, makes recommendations to the ARB on future reactivity-related issues at the request of the Board Chair.

- **Ongoing research programs and projects are summarized in the ARB publication, Air Pollution Research.** The publication includes research projects completed since the beginning of 1989. It is available on the World Wide Web at **www.arb.ca.gov/rd/apr/intro.htm,** and from ARB's Public Information Office.

Theme Two: Reduce Regulatory Complexity and Cost

Reduced regulatory complexity and cost were identified, especially by regulated community stakeholders, as key areas of importance for improving California's air quality management system. Concerns expressed by some stakeholders included: flexibility associated with federal regulations regarding toxics and permitting (Titles III and V of the 1990 Federal Clean Air Act Amendments), less flexible emission reduction approaches, burdensome compliance requirements, lack of efficient (market-based) emission reduction approaches, overlapping authorities and programs, and inconsistent and duplicative regulations. On the positive side, most stakeholders recognized an increased awareness, by both local and state air quality managers, of the need to simplify regulations. They applauded upgraded state and local business assistance support programs; and they expressed an appreciation of greater state and local emphasis on cost effectiveness considerations in control measure development. Important ARB and CAPCOA efforts underway or responsive to these concerns include:

- **ARB has incorporated Governor Wilson's Regulatory Improvement Initiative (Executive Order W-127-95) as a fundamental part of its regulatory process.** This initiative addresses the need for reduced regulatory burden on businesses. ARB's adoption of Cal/EPA's "Permit Applicants Bill of Rights" is the basic foundation for ARB's approach. These rights include:

  I. Permit applicants have the right to assistance in understanding regulatory and permit requirements. ARB maintains an Ombudsman to work directly with applicants. Permit Assistance Centers located throughout California have permit specialists from state, regional, and local air district and other agencies to identify permit requirements and assist in permit processing.

  II. Permit applicants have the right to know the projected fees for review of applications, how any costs will be determined and billed, and procedures for resolving any disputes over fee billings.

  III. Permit applicants have the right of access to complete and clearly written guidance documents that explain the regulatory requirements. Agencies must publish a list of all information required in a permit application and of criteria used to determine whether the submitted information is adequate.

  IV. Permit applicants have the right to timely completeness determinations for their

applications. In general, agencies notify the applicant within 30 days of any deficiencies or determine that the application is complete. California Environmental Quality Act (CEQA) and public hearing requests may require additional information.

V. Permit applicants have the right to know exactly how their applications are deficient and what further information is needed to make their applications complete. Pursuant to California Government Code Section 65944, after an application is accepted as complete, an agency may not request any new or additional information that was not specified in the original application.

VI. Permit applicants have the right of a timely decision on their permit application. The agencies are required to establish time limits for permit reviews.

VII. Permit applicants have the right to appeal permit review time limits by statute, or administratively, that have been violated without good cause. For state environmental agencies, appeals are made directly to the Cal/EPA Secretary or to a specific board. For local environmental agencies, appeals are generally made to the local governing board or, under certain circumstances, to Cal/EPA. Through this appeal, applicants may obtain a set date for a decision on their permit and, in some cases, a refund of all application fees (individual boards and departments have details for their jurisdictions).

VIII. Permit applicants have the right to work with a single lead agency where multiple environmental approvals are needed. For multiple permits, all agency actions can be consolidated under a lead agency. For site remediation, all applicable laws can be administered through a single lead agency.

IX. Permit applicants have the right to know who will be reviewing their application and the time required to complete the full review process.

ARB's adoption of these "rights" has resulted in renewed commitment to develop sensible, easy-to-understand rules and regulations. It has promoted regulations that are balanced and comprehensible by all affected parties. Its regulations are developed in an open, public process involving all stakeholders. Additionally, ARB now includes a "plain English" description of the regulatory requirements in its staff reports for proposed regulations .

- **ARB began publishing its yearly Rulemaking Calendar** in response to Governor Wilson's Executive Order W-144-97. This calendar, published by January 30 of each year, provides stakeholders with greater lead time to anticipate upcoming regulatory items. The Calendar is available from ARB's Public Information Office. ARB regulatory items heard in 1998 included:

  -- Enhanced exhaust and evaporative emission standards for light and medium duty vehicles, including sport utility vehicles
  -- Enhanced exhaust standards for motorcycles
  -- Enhanced exhaust standards for personal watercraft such as jet skis
  -- Identification of particulate emissions from diesel-fueled engines as a toxic air contaminant
  -- Improved diesel locomotive fuel specifications
  -- Improved early vehicle retirement program

-- Development of eight air toxics control measures, including measures for chromium electroplating, ethylene oxide sterilizers, medical waste incinerators, non-ferrous metal melting, and vapor recovery nozzles at retail service stations.

- **The Governor appointed an ARB Ombudsman in April, 1995.** Executive Order W-144-97 also required the creation of ombudsman programs in each state agency. ARB's Ombudsman Office was established in December, 1995. Its mission is to help the ARB and the state's 35 air districts demystify and simplify California's air quality regulatory system for air quality stakeholders. It assists air quality stakeholders doing business, or seeking to do business, in California, and it mediates disputes among stakeholders and regulatory agencies.

- **The ARB Ombudsman Office strives to assure that stakeholders are aware of information** and processes available to them to be involved in the development and implementation of air quality management program efforts in California. The Office tracks ARB public outreach efforts for each regulatory item, and makes a report to the Board on the sufficiency of outreach for each item. The Office also administers stakeholder satisfaction surveys on the public involvement process for each regulatory item.

- **ARB completed its review of sunset regulations per Executive Order W-144-97**. The order was intended to reduce regulatory burden on industry through the elimination of obsolete and duplicative regulations. The review included:

    1. A review of the authority, the continued necessity for, and the cost effectiveness of each regulation, along with a determination to retain, modify, or repeal the regulation, including development of recommended legislation if required to implement the determination;

    2. An updated estimate of the fiscal and economic impacts of the regulation on all levels of government, consumers, and the regulated community;

    3. Changes to the regulation to minimize overlap and conflicts with comparable federal and local regulations, unless the differences in state requirements can be shown to provide additional benefits that exceed the additional costs; and
    4. Changes to the regulation to consider alternative approaches that are less intrusive or more cost effective.

- **An example of the results of this review are seen in the toxics portion of ARB's air pollution program** where it revised the chrome plating control measure, the ethylene oxide control measure, and the non-ferrous metal melting control measure this year. The proposed changes are designed to address technology changes and lessons learned during control measure implementation to enhance their consistency with the federal MACT control standards that were adopted pursuant to section 112 of the Clean Air Act.

- **ARB and many of the air districts have business assistance/compliance assistance programs** featuring help lines, informative resource guides and web pages, and training programs which assist businesses to understand and comply with air quality regulations**.**

- **ARB's toll free helpline helps businesses and individuals with their air pollution questions and issues.** Customers can call ARB at **1-800-272-4572.** ARB also provides publications on business assistance, air pollution training courses and compliance materials, and information on pollution prevention.

- **ARB's web page (http://arb.ca.gov) provides an overview of air quality permitting issues** in California and several hot links to ARB topic areas which involve certifications, variances, or other ARB approvals. ARB's web page also contains the searchable text of the federal Clean Air Act and California air pollution control laws.

- **California's local air pollution control districts (APCD's) and air quality management districts (AQMD's) provide electronic versions of their district stationary source rules** to the California Air Resources Board for inclusion on ARB's Web Page **(http://www.arb.ca.gov)**.

- **ARB, in cooperation with the California Trade and Commerce Agency, held a Financial Assistance Improvement Forum on December 17, 1998.** The forum brought together private and governmental financial lenders, financial and environmental assistance providers, and small business representatives to jointly consider how the current system can better meet financial assistance needs of small businesses for environmental projects. A Task Force of some forum participants will develop a White Paper, in early 1999, with recommendations on approaches for improving financial assistance to small businesses.

- **The CAPCOA/ARB Business Assistance Committee** -- which includes business stakeholder membership -- fosters communication among business stakeholders, ARB, and air districts to improve ARB and local district business assistance programs. It assists in the development of business assistance resources such as information guides and model air quality business assistance programs.

- **The South Coast AQMD Upgraded its Permit Application Request System**. It allows for permits over the Internet and includes a Permit Enhancement Program designed to reduce filing errors, enhance customer service, and expedite permit processing. The program provides for fewer and simplified forms and instructions, prompt processing and notification of acceptance or rejection, electronic access to forms and electronic filing for some applications, such as boilers, internal combustion engines, fuel storage and dispensing, and negative air machines. Future goals include expanded electronic application filing and permit issuance. The improved permitting system is being shared with the regulated community via brochures, compliance kits, and various media avenues to increase public awareness of new program enhancements and ensure that applicants are fully informed of AQMD application submittal requirements. If a permit applicant needs help with permit application forms or other permit processing-related assistance, a Permit Services representative is available to help both via telephone **(909-396-2468)** and E-mail **(permit_svcs@aqmd.gov)**.

- **The ARB considers cost in the development of all regulatory items.** The ARB helped to develop and closely follows the comprehensive Cal/EPA guidelines for conducting cost-effectiveness analysis. A recent example can be found in the staff report which supports the consumer products mid-term measures regulations. The report contains a cost-effectiveness analysis conducted for every individual volatile organic compound (VOC) according to

procedures specified in ARB's Cost Effectiveness Guidelines.

- **The ARB staff has participated with district representatives in developing explicit incremental cost-effectiveness calculation procedures.** State law requires air districts to assess the cost-effectiveness of all control options and to calculate the incremental cost-effectiveness of each. The ARB/district procedures can be used to fulfill these legal requirements.

- **ARB's Cost Effectiveness Guidelines are contained in a document entitled "Cost-Effectiveness: District Options for satisfying the Requirements of the California Clean Air Act,"** September, 1990. These guidelines establish cost effectiveness rates -- in dollars per ton of pollutants reduced, or in dollars per unit of air quality improvement -- as a basis for comparing the cost effectiveness of different control measures.

- **A multitude of ARB and air district rules and regulations have been revised to exempt small emission sources from permits and certain regulatory requirements** (e.g., air toxics program, mobile equipment). Most ARB air toxic control measures offer alternative limits or reporting requirements for small facilities or incorporate a tiered approach. This provides different limits depending upon the size of the facility or process rate. For example, the toxic control measure for chrome platers has three levels of emission limits based on facility size.

- **The CAPCOA/ARB/Industry Working Group addresses a range of industry concerns** with local, state and federal regulatory development and implementation. The group is currently assisting ARB negotiations with U.S. EPA on permitting simplification and equivalency issues. Although U.S. EPA has thus far adhered to a less flexible national approach to integrating its new 1990 statutory requirements with California's mature programs, the group is hopeful that, through well-reasoned approaches which are at least as health-protective as the U.S. EPA standards, it can persuade U.S. EPA to allow ARB and the Districts to utilize equivalent approaches. Such approaches are needed to most efficiently and effectively manage stationary air pollution sources in California. Discussions with EPA to this end are ongoing. (See next paragraph.).

- **ARB is a primary participant in the California Coalition of Government and Businesses (Coalition)**. The group's objective is to harmonize state and federal programs, while ensuring public health protection and ongoing compliance with both programs. The group has been developing action plans to work with U.S. EPA to reduce duplication and promote California perspectives in environmental protection. The program areas currently addressed by this Coalition include the federal air toxics program (Title III), the federal operating permits program (Title V), the approval of revisions to the State Implementation Plan, and the recognition of variances that allow temporary relaxation of requirements. The Coalition hopes to achieve more flexible approaches which avoid duplication, provide for the most efficient use of limited resources, achieve or exceed the environmental benefits of the federal program, provide greater certainty to businesses, and allow for the continued successful implementation of California's program. The Coalition met with EPA management in Washington in October, 1998, and discussions are on-going.

- **ARB is committed to continuing on-going ARB/CAPCOA statewide regulatory**

improvement meetings. ARB participates routinely with CAPCOA, including their Planning Managers, Engineering Managers, and Toxics Committee subgroups to discuss issues pertaining to the development and implementation of regulations designed to meet the federal and state ambient air quality standards and reduce public exposures to air toxics. These meetings result in partnership agreements to work together towards the goal of cleaner, healthier air for all Californians.

- **ARB is an active participant in the state's One-Stop Permit Assistance Centers.** These centers (a network of 13 throughout the state's most populated regions), in partnership with other California Environmental Protection Agency (Cal/EPA) agencies, plus local and regional agencies, have helped to assist businesses with permit and compliance information and permit processing. Since their inception, the Centers have provided assistance to more than 28,000 employers. They have helped eliminate regulatory overlap, reduce regulatory burden, and achieve efficiencies along organizational lines.

- **ARB participates in the Cal/EPA toll free 1-800-Gov-1-STOP (1-800-468-1786) Permit Assistance Centers Hotline**. Customer calls concerning permitting are routed to the nearest Cal/EPA Permit Assistance Center. This statewide service allows for easier access for California businesses to get answers to their start-up, expansion, and existing business permitting questions.

- **ARB participates in the California Government On-Line to Desktops (CalGOLD) Electronic Permit Assistance System.** The CalGOLD system builds an electronic bridge between business users and permitting staff across the state. It builds on the successful model of the Permit Assistance Centers. CalGOLD enables state, local, and regional governments to help, via the Internet, thousands of businesses which are in need of a guiding hand in communities not presently served by the original 13 Centers. It allows a single point of entry to a consolidated permit processing system and establishes a reliable, coordinated path to state, regional, local and federal legal government permits in order to help provide for a speedy startup or expansion of a business.

- **ARB participates in U.S. EPA's Small Business Assistance/Small Business Ombudsman Program Development Program**. This effort aims at fostering communication among states and U.S. EPA to improve business assistance programs.

- **ARB and air districts participate in U.S. EPA regulatory flexibility (XL) programs**. ARB staff worked closely with the Ventura County Air Pollution Control District, U.S. EPA, various stakeholders, and representatives from the Imation Corporation located in Camarillo, California to develop the **Imation Project XL Proposal**. The proposal, expected to be approved by the U.S. EPA in late 1998, will provide many environmental benefits while providing Imation Corporation with much needed flexibility in day-to-day operations.

- **ARB staff are testing the effectiveness of Permit Consolidation Zones.** They are working with other Cal/EPA Boards and Departments, and local agencies to implement a pilot program. The SB 1299 Permit Consolidation Zone Pilot Program provides for simplification and flexibility in the permitting process through use of permit consolidation zones. New or expanded facilities within such zones may submit a single Facility Compliance Plan in lieu of individual permit applications.

- **ARB's Statewide Portable Equipment Registration Program,** required by legislation enacted in 1995, establishes a uniform system to regulate portable engines and associated equipment. Portable equipment engines include those found on cranes, pumps, well drillers, wood chippers, and military tactical support vehicles. Engines and associated equipment registered under the ARB program may operate throughout the state without having to obtain authorization or permits from individual air districts. However, districts are responsible for enforcing the requirements established in the state regulation and may recover costs of enforcement through the fee schedule established by ARB. ARB's portable equipment registration program was revised in December, 1998, to allow previously ineligible equipment into the program (including portable equipment that operates in State Territorial Waters and portable sand and gravel screening, rock crushing, and pavement crushing and recycling operations subject to federal New Source Performance Standards).

Theme Three: Strengthen Air Quality Public Information/Awareness Programs

The Public Information and Awareness element of California's air quality system was identified by stakeholders as a key area needing improvement. Specific areas of concern included: lack of a master air quality public information/outreach plan; poorly communicated messages to the public about improvements in air quality; and poorly communicated messages about steps individual members of the public can take to improve air quality. Some comments heard in support of the public information/outreach program included: effective use, by ARB and air districts, of the Internet to distribute information; existence of partnership efforts among regulators, environmental health groups, and industry to share the air quality message; and recognition, by ARB and air districts, of individual and group accomplishments to improve air quality. Some efforts being carried out by ARB and CAPCOA that are responsive to these comments include:

- **ARB updated its Strategic Plan. The ARB strategic plan includes several objectives related to increased public education and outreach.** These include:

  -- Increasing the number and quality of broad-based, multi-media public awareness and outreach campaigns;
  -- Expanding resources available for conducting major public outreach and communication programs by increasing partnerships with stakeholders;
  -- Increasing public access to air quality information by providing data through computer access and published reports.

- **ARB initiated the 1997 50th Anniversary "Success Is In the Air" Outreach Campaign.** This statewide partnership-based campaign highlighted the many successes of California's air quality management program over the last 50 years. It also spoke to air quality challenges and opportunities in the future. The campaign included coordinated media outreach (press kits to local news media, public service announcements, and multiple-page advertisements in major newspapers) and speaking engagements throughout California. Reprints of the advertisement series are available from the ARB Public Information Office upon request.

- **ARB participates in the CAPCOA/ARB Public Outreach Working Group**. This group works to develop improved ARB and air district public information outreach, including improved coordination with the media and other stakeholders, better coordinated outreach events, improved brochures, and improved access to educational information including the Internet.

- **ARB works with stakeholders on numerous public education outreach efforts** including:

  -- **PM2.5 Public Planning Meetings and Workshops.** These meetings have been held throughout 1998, and will be on-going. They will help ARB to design a plan to improve its understanding of fine particle sources and their contributions to particulate air pollution. They will lead to improved strategies for managing particulate air pollution.
  -- **CAPCOA/ARB Public Outreach Working Group.** This group meets on a monthly basis to coordinate ARB/Air District public information/education outreach efforts.
  -- **High School EV Education.** With this program, ARB employees visit selected schools to show-case various models of electric vehicles, providing children with hands-on exposure to the latest electric vehicle technologies.
  -- **Statewide Smoking Vehicle Hotline**. This ARB/Air district program offers a single toll-free cellular phone number (#SMOG) that can be called from anywhere in the state to allow citizens to report smoking vehicles to local and state air pollution control authorities. It is currently being upgraded to include regular (non-cellular) phone service.
  -- **Sacramento Valley Air Quality Hotline and Web Page**. These information services, developed in partnership by the ARB, local air districts, and Sacramento Valley stakeholder groups, allow callers to obtain the latest data on air quality in the Sacramento Valley. Plans are underway to include up-to-the-minute, and next-day forecasts of particulate matter air quality data.
  -- **Improved ARB Web Page**. This new web page includes a new first page section with pointers to topics of special interest (e.g., meetings and new reports). A powerful search engine allows for current information on meetings and the department's many programs. The page continues to undergo modification to provide the most useful and easily obtainable information possible.
  -- **More District Web Pages on the Internet**. These pages include the Bay Area AQMD, Feather River AQMD, Mojave Desert AQMD, Northern Sierra AQMD, Sacramento Metropolitan AQMD, Sacramento Valley Air Basin Website, San Luis Obispo County APCD, San Diego County APCD, Santa Barbara APCD, South Coast AQMD, and the Yolo/Solano AQMD **(See Appendix C).**
  -- **Continuation of Clean Air Awards Programs.** ARB and a number of air districts around the state routinely grant Clean Air Awards to recognize individuals and organizations which go the extra mile to make air quality improvements a top priority. The awards make a statement to businesses, environmental groups, and the public at large that these entities deserve credit for their commitments to a healthy environment.
  -- **Public Tours of ARB's Air Quality Monitoring Laboratory**. ARB regularly offers tours of its monitoring and laboratory facilities to local schools. The tours help children and their teachers to understand how air pollution and other environmental data are measured.

Theme Four: Continue and Expand Stakeholder Involvement

Regulators, the regulated community and public health advocates will and should continue to have their respective agendas, perspectives and priorities. When the present system operates at its best, it ensures that members of each group are kept abreast of the plans, views and values of the others. All participants felt it critical -- in order to ensure the benefits of both continuity and synergy -- that stakeholder involvement in ARB and Air District program planning, development and implementation be continued and expanded.

Concerns expressed by some stakeholders included: a desire for broader involvement of the public, including motorists and less politically-involved citizens, in regulation development; a need for broader communication among local planners such as councils of government, land-use, transportation, and air quality managers, in order to formulate broad-based approaches; and improved measurement of efforts to involve stakeholders in air quality program development and implementation efforts. Typical comments heard regarding strengths in the stakeholder involvement area included approval of: practice of open and inclusive regulation development processes; active outreach to stakeholders regarding workshops and hearings; and partnership efforts to involve stakeholders in control demonstration projects. Some of the ways in which ARB and CAPCOA are being responsive to these comments include:

- **ARB and air districts utilize comprehensive outreach processes.** These include regulatory development hearings and workshops -- to encourage and provide for stakeholder involvement in rule and regulation development. All district workshops and hearings are noticed at least 10 days in advance and all ARB hearings are noticed 45 days in advance. The ARB Ombudsman's Office tracks all regulatory items and reports to the Board on the adequacy of stakeholder outreach and public involvement as the Board considers each regulatory item.

- **Air District Community Clean Air Advisory Councils exist in many air districts**, including the South Coast AQMD; the Sacramento Metropolitan AQMD, the Santa Barbara APCD, the Bay Area AQMD; the San Joaquin Valley Unified AQMD, and the Monterey APCD**.** Councils involve a broad cross-section of community members and improve stakeholder ability to evaluate, analyze, and recommend various approaches to air quality management.

- **Various air districts have augmented their strategic planning processes** to include greater stakeholder involvement. The Air Quality Stakeholder Visioning Forum, sponsored by the Santa Barbara, Ventura, and San Luis Obispo air districts, in February of 1997, is an example of these efforts.

- **ARB updated the Stakeholder Involvement Element of its Strategic Plan in 1997.** The plan has been augmented to increase the effectiveness of ARB's stakeholder participation processes through the following:

    -- Increase the level of satisfaction of ARB's multiple stakeholders through collaborative problem-solving, consultation meetings, and public workshops.
    -- Establish monitoring and evaluation systems -- such as surveys and performance measures -- to identify the needs, expectations, and satisfaction of ARB stakeholders

and the public.
- -- Encourage stakeholder input in the PM2.5 planning process through public meetings and workshops.
- -- Increase the use of teams within ARB to identify and implement effective customer-oriented solutions, programs, and processes.
- -- Continue management support of team activities through team sponsorship and by providing necessary resources.
- -- Provide training opportunities for ARB managers and staff regarding teams, customer service, and other quality improvement topics.
- -- Measure the number of major public education campaigns conducted regarding air quality challenges, successes, and strategies for the future.
- -- Evaluate the measured effects on public awareness of campaigns regarding air quality and related programs and activities.
- -- Measure the number of stakeholder forums held annually.
- -- Evaluate stakeholders' ratings of ARB's processes regarding key identified themes of importance.
- -- Measure the number of quality improvement teams.

- **ARB and a number of Sacramento Valley air districts increased efforts to bring diverse stakeholders together to develop alternatives to rice straw burning**. To this end, two rice straw burning alternatives forums were held. These forums, conducted in March and June, 1997, helped to bring together a broad cross-section of stakeholders -- including rice farmers, public health groups, business entrepreneurs, the financial community, and elected officials -- to share information, and develop new approaches to divert rice straw away from open field burning. As a result of these meetings, legislation was signed by the Governor to appropriate five million dollars to the **Rice Straw Demonstration Project Fund**, administered by ARB. This program is designed to aid in the demonstration and commercialization of rice straw utilization technologies.

- **The ARB Office of Intergovernmental Affairs works to build partnerships with local officials to enhance opportunities to achieve California's air quality goals.** The Office addresses stakeholders at the local elected level. It has coordinated a variety of ad hoc outreach efforts to local elected officials on critical air quality issues, most notably the gasoline additive methyl tertiary butyl ether (MTBE). The Office has briefed various local air districts, city councils, advisory boards, and public utility districts on the MTBE situation. Often contentious, this effort has helped to factually inform local elected officials about vital air quality issues. The Office is planning an air quality leadership forum for the first quarter of 1999. It will bring together local elected air quality officials, ARB leadership, and environmental and industry leaders to exchange information and perspectives on emerging air quality issues.

- **ARB coordinates and supports the CAPCOA/ARB Business Assistance Committee.** The group, which includes business stakeholder membership, fosters communication among ARB, air districts, and business stakeholders to improve ARB and local air district business assistance programs. Contact ARB's Office of the Ombudsman for a list of committee representatives **(800-ARB-HLP2)**.

- **ARB and CAPCOA have sponsored a number of forums to promote dialogue on**

important issues associated with understanding and implementing the Clean Air Act Standards Implementation. These forums, carried out in partnership with stakeholders, have included:

-- The September 1997 Technology Symposium in Irvine, California. This forum was sponsored by ARB, CAPCOA, and the California Environmental Dialogue to identify promising new technologies that are near commercialization and will help meet Clean Air Act emission reduction requirements.
-- The 1998 PM2.5 and Regional Haze Forums, which were held throughout California in 1998, will be held routinely over the next several years. It is hoped they will lead to improved strategies for managing particulate air pollution in California.

- **ARB holds research planning and development workshops annually.** The workshops are held throughout California to share ARB research efforts and to receive public comments on proposed ARB research projects and findings.

- **The CAPCOA/ARB/Industry Working Group addresses a range of industry concerns with local, state and federal regulatory development and implementation.** The group is currently assisting ARB negotiations with U.S. EPA on permitting simplification and equivalency issues. Although U.S. EPA is currently inflexible in requiring a national approach to California's unique circumstances, the group is hopeful that, through well reasoned and well supported positions, it can persuade U.S. EPA to allow ARB and the Districts to utilize equivalent approaches needed to most efficiently and effectively manage stationary air pollution sources in California.

Theme Five: Pursue Proportionate Emission Reductions

A strong concern expressed by virtually all stakeholders was the need for emission control and reduction strategies to be developed and applied to sources in proportion to their contribution to the overall emissions inventory. This concern was voiced most often in reference to a perceived over-emphasis on stationary source reductions relative to reductions achievable but not obtained from mobile sources, particularly automobiles and trucks. This was a critical, widespread perception that was genuinely held, albeit with an uneven awareness of current and prospective control efforts. In the 1994 State Implementation Plan (SIP) for Ozone (California's "blueprint" for cleaning the air), a substantial portion of the emission reductions are projected to come from mobile sources as California's mobile source programs come on line. In the SIP, emission reductions from stationary sources barely keep pace with their projected growth in actual emissions.

Addressing these sources proportionately was identified by most stakeholders as a fundamental. Most stakeholders wanted more research on emission source characterization, greater coordination among local government officials regarding air quality/monetary benefits of air quality linked land-use decisions, and greater emphasis on non-traditional mobile source controls (e.g., off-road construction equipment). Most stakeholders supported ARB/CAPCOA research efforts underway to characterize more accurately emission contributions from all source categories. Such efforts were deemed necessary elements for better understanding and controlling the proportion of emissions coming from various sources. Efforts to educate the public about alternatives to driving alone and efforts to pursue categories of pollution such as consumer products were also recognized as important. Some of the ways in which ARB and CAPCOA are

being responsive to these comments include:

- **ARB, air districts, and their stakeholders carried out a number of studies** aimed at better characterizing proportionate pollutant emissions from mobile and stationary sources of PM10 and ozone precursors. The studies will also quantify and assess the transport of PM10 and ozone precursors between areas. Examples of these studies include:

  -- **1997 Southern California Ozone Study (SCOS97)** -- SCOS97 is an air quality study of Southern California which is sponsored and financed by a number of state, federal, and international agencies, air districts, and businesses interests. The major purposes of SCOS97 are to: 1) update and improve the air quality, meteorology, and emission data used in air quality simulation models for evaluating ozone control strategies in southern California; and 2) quantify ozone transport between areas in southern California. The study area is from San Luis Obispo, Kern and San Bernardino counties to the northern fringe of Mexico, and from the Pacific Ocean to the Arizona-Nevada border. The field study was conducted from June 15 to October 15, 1997; analysis of the data will continue for several years.

  -- **California Regional PM2.5/PM10 Air Quality Study (San Joaquin Valley Study) --** The San Joaquin Valley Study is another large scale, multi-year, multi-agency study to collect air quality, meteorological, and emission inventory data in the San Joaquin Valley. Sponsors and participants include a wide range of federal, state, and local governments and businesses. The major purposes are to: 1) improve understanding of how, where, and from what sources and processes particles are formed; 2) develop methods for comparing control strategies for attaining PM standards in central California; and 3) provide a way to estimate the impacts of different PM control strategies on visibility, levels of air toxics and acidic aerosols, and on attainment strategies for ozone. A preliminary field study took place during the fall and winter of 1995/96 in the Bakersfield and Fresno areas to: 1) collect information that would help plan and carry out the overall study; 2) improve understanding of the nature and causes of high fall and wintertime PM10 concentrations; and 3) develop a database for evaluating aerosol and fog models. The main field study will start in December, 1999, and end in early 2001, and will include monitoring throughout the year as well as more intensive fall and winter episodic monitoring.

  -- **Tracking the Sacramento Pollutant Plume over the Western Sierra-Nevada --** ARB contracted with the University of California, Davis to collect air quality and meteorological data with an instrumented aircraft to characterize ozone transport from the Sacramento area into the Sierra Nevada during the summer of 1995 and 1996. The data were collected to support ARB's assessment of the amount of pollution that was being transported from the Sacramento urban area into the counties on the western slope of the Sierra Nevada.

- **ARB conducts studies to characterize emissions associated with land use/transportation relationships --** ARB evaluates pollutant emission reduction strategies associated with community planning and other transportation related activities. Such studies include:

  -- **ARB's "Land Use -- Air Quality Linkage Report" --** This report has been updated to include the ARB's research on the relationship of land use and air quality. The

report is available on ARB's web-site.

-- **A research project, "Quantification Methods to Identify Emission Reductions from Seasonal and Episodic Public Education Programs" --** This research is being carried out in cooperation with the Bay Area AQMD for the purpose of quantifying the air pollution emission reductions associated with voluntary ridesharing programs during seasonal and episodic air pollution time periods. Results are expected in the next two years.

- **ARB held forums to develop long-term strategies to reduce emissions associated with land use decisions.** The forums brought together air quality, transportation, and land-use planners. They included:

  -- **"The California Bicycle Summit" --** ARB and four other state agencies co-sponsored "The California Bicycle Summit" on March 5-6, 1998. The event was attended by representatives of agencies and organizations interested in improving California's bicycle facilities. ARB and interested stakeholders developed a Summit Plan that includes recommendations for improved facilities, improved land use and transportation relationships, and strengthened bicycle safety education for bicyclists as well as motorists.

  -- **The CAPCOA Rural Planning Managers Meetings --** This group meets every other month to discuss strategies for reducing emissions through changes to transportation and land-use planning. In addition, the Sustainable Development Subcommittee of CAPCOA has recently revised and updated the URBEMIS computer model that is used to estimate emissions related to land-use development. The revised model contains for the first time estimates of potential emission reductions from a variety of construction, area, and mobile source mitigation measures.

- **ARB sponsors research to better understand and quantify the ozone formation potential of hydrocarbon emissions from consumer products such as aerosol spray cans**. The research includes:

  -- **Investigation of Atmospheric Reactivities of Selected Stationary Source VOCs** -- The objective of this on-going study by the University of Riverside, California is to determine the reactivity of compounds in consumer products that are suspected of being major contributors to ozone formation. The results will be used to develop control strategies for consumer products and to improve the chemistry in air quality models used to develop California's ozone SIP.

  -- **Uncertainty Analyses of Chemical Mechanisms Derived from Environmental Chamber Data** -- ARB sponsored a research study, carried out by the University of California, Riverside, to improve the procedures used to estimate the atmospheric reactivity of compounds found in consumer products.

  -- **Improvements of Speciation Profiles for Aerosol Coatings** -- ARB sponsored a research study, being carried out by California Polytechnic University, San Luis Obispo, to identify and quantify organic gases in about 50 of the aerosol paint and coating products sold in California. The results will be used to improve estimates of the atmospheric reactivity of these coatings.

  -- **1997 Consumer and Commercial Products Survey** -- ARB surveyed manufacturers of consumer and commercial products sold in California to assess the volatile organic

compound emissions from their use. Information is being used to improve the emissions inventory to allow more accurate air quality modeling for planning and analysis.

- -- **Low Vapor Pressure Volatile Organic Compound (LVP-VOC) Survey for Consumer and Commercial Products** -- ARB will be surveying consumer products manufacturers to gather information on solvents in the consumer products industry that have very low volatilities. The information will be used to study the environmental fate of LVP-VOCs, update the emission inventory, and evaluate impacts of incorporating one or more test methods into the definition of LVP-VOCs. ARB released a draft survey for review by Consumer Products Working Group in 1998.
- -- **Aerosol Coatings Survey** -- ARB conducted a survey of aerosol coatings manufacturers to gather sales and formulation data of products sold in California in 1997. Ingredient information will be used to improve the emissions inventory to allow more accurate air quality modeling for planning and analysis.

- **ARB carries out studies to survey and characterize emissions from the architectural and industrial coatings industries.** These include:

  - -- **Architectural and Industrial Maintenance Coatings Survey** -- ARB surveyed architectural and industrial maintenance manufacturers on coatings sold in California to assess volatile organic compound emissions from the use of these coatings. The information will be used to improve the emissions inventory and to study whether additional flexibility can be built into regulations based on the reactivity of the ingredients.
  - -- **Improvement of Speciation Profiles for Architectural and Industrial Coating Operations** -- ARB contracted with California State Polytechnic University, San Luis Obispo, to develop the chemical composition of 11 categories of coatings by testing 52 water-based and 56 solvent-based architectural and industrial coatings. The data are being used to improve emission estimates from these coatings.
  - -- **Industrial Surface Coatings: Wood Furniture and Fixtures Emissions Inventory Development** -- The University of California, Davis recently completed a project that provided data to be used in the development of organic gas emission estimates from the application of coatings to wood furniture and fixtures in California.

- **ARB evaluates and updates the State Implementation Plan (SIP) and individual district air quality plans.** The SIP is California's blueprint for meeting national ambient air quality standards. It is composed of local, regional, state, and federal rules and measures to obtain the emission reductions necessary to demonstrate attainment with the air quality standards. The SIP is a dynamic plan and, when necessary, it is changed to reflect new or updated information relating to modeling, emission inventories or control strategies. Some of these changes have included:

  - -- **Updates and revisions to the South Coast District and Santa Barbara portions of the 1997 SIP**. Santa Barbara has submitted a plan for reclassification, which will provide it with extra time to meet the national ambient air quality standard for ozone. ARB adopted a revision to the SIP by replacing an infeasible "M" (mobile source) measure, (M-7, Truck scrappage), with a new strategy for reducing emissions from heavy-duty trucks (M-17).

-- **The South Coast District must update its air quality plan by 2000 under state law.** ARB will concurrently update its comprehensive strategy and mobile "M" measures. ARB will continue to seek emission reductions where technologically feasible and cost-effective.

- **In February 1998, ARB approved the first revision to the mobile source elements of the 1994 Ozone SIP**. An infeasible mobile measure (Measure M7, Truck scrappage in the South Coast) was withdrawn and a new mobile measure (M17) was submitted to secure additional emission reductions from the same source category (heavy-duty diesel vehicles). In March 1998, ARB approved revisions to the small off-road engine regulations that provide regulatory relief and flexibility for manufacturers, and in April, 1998, ARB approved new on-road heavy-duty vehicle regulations for 2004 and subsequent model year vehicles. These tighter emission standards align with the federal standards and satisfy SIP measure M5.

- **ARB is examining the potential emission reductions from, and the costs of, regulating diesel fuel used in locomotives operating in California.** It is maintaining its commitment to explore every opportunity for achieving emissions reductions from mobile sources. While on- and off-road diesel-fueled vehicles in California must use reformulated diesel fuel, locomotives are not subject to such requirements. Pending the results of ARB's evaluation, a proposed regulation may be brought to the ARB Board in 1999.

- **ARB has identified spark ignition (primarily gasoline, LPG, and CNG fueled) engines 25 horsepower and greater as one of the off-road categories as having significant opportunity for emission reductions.** In the SIP, ARB included two measures to achieve emission reductions from this industrial equipment. Measure M11 addresses the engines ARB has authority to regulate, such as forklifts and aircraft ground support equipment. Measure M12 assigns to U.S. EPA responsibility for emission reductions from the equipment ARB is preempted from regulating, such as farm and construction equipment. The ARB Board adopted the staff-proposed regulations for spark ignition engines of 25 horsepower and greater used in off-road equipment in October, 1998.

- **ARB adopted a regulatory proposal for on-road motorcycles in December, 1998.** Technological advances since the adoption of the original motorcycle regulations in 1975 indicate that significant and cost-effective reductions are now possible. In addition to incorporating the benefits of new technologies, ARB's new regulations will include control for NOx, a pollutant that was not regulated under the prior motorcycle emission standards.

- **ARB amended its standards for several categories of aerosol coatings sold in California.** On November 19, 1998, the Board determined that it was technically and economically infeasible to meet standards for 23 of the 35 categories previously adopted, and moved their implementation dates from December, 1999 to January, 2002.

- **ARB's 1994 Ozone SIP calls for the adoption of technology-based emission control strategies for light-duty vehicles (measure M2).** On November 5, 1998, the Air Resources adopted California's next-generation motor vehicle strategy, referred to as the low-emission vehicle II program, or LEV II. LEV II will meet the reduction goals of M2 and is composed of the following elements: (1) a new super-ultra low emission vehicle category for light-duty vehicles; (2) lower NOx emission standards for the low and ultra-low emission vehicle

categories; (3) lower emission standards for sport-utility vehicles; (4) "zero" evaporative and refueling emission requirements; and (5) extending and tightening the fleet average NMOG (non-methane organic gas) standard for the years 2004 through 2010.

- **In recognition of the potential emission reductions available from pleasurecraft, the 1994 Ozone SIP includes a measure to reduce emissions from new pleasurecraft**. Because U.S. EPA had proposed national emission standards, U.S. EPA was assigned the responsibility for those emission reductions, (measure M16). Recent inventory studies suggest that emissions from pleasurecraft in California are much greater than accounted for in the SIP, perhaps up to ten times greater, due to large increases in population, average horsepower, and usage. Furthermore, ARB believes that more stringent standards than what U.S. EPA set are technologically feasible and cost-effective. As a result, ARB believed that adopting more stringent California-only emission standards for new pleasurecraft could achieve significant additional emission benefits over U.S. EPA's adopted regulations. In addition, by controlling the exhaust emissions from pleasurecraft, the amount of unburned fuel released into California's waterways will be significantly reduced. This will help to mitigate some of the multi-media contamination issues caused by fuel related byproducts such as benzene and MTBE. ARB adopted the regulations for pleasurecraft in December 1998.

- **At its December, 1998, board meeting, ARB adopted regulations for Voluntary Accelerated Light-Duty Vehicle Retirement Enterprises.** The adopted regulations are designed to encourage the early retirement of portions of the older vehicle fleet. They provide protocols for the implementation of local air district vehicle retirement programs; and the protocols for the implementation of measure M1 of the 1994 SIP for Ozone, if adequately funded.

Chapter Seven

LOOKING AHEAD: THE NEXT STEPS FOR AIR QUALITY MANAGEMENT

Background

Previous chapters have described the air quality stakeholder visioning forum process that occurred between February 1996 and February 1997. Chapters Three through Five summarized comments heard at the internal and external forums, as well as input received from the follow-up "Key Themes" survey. Chapter Six presented a number of actions being carried out by ARB and local air districts which are either responsive to or directionally parallel to comments heard at the forums. This concluding chapter summarizes accomplishments, changes and continuing challenges in California air quality, and then assesses their implications for the relationship between air quality managers and the customers and stakeholders they serve.

"Ask yourself the secret of your success. Listen to your answer, and practice it."
-- Richard Bach

Taking Stock of Today

Much has occurred since the conclusion of the stakeholder visioning forum process in February, 1997. California's population and economy have continued to grow, with jobs and productivity at all time highs. Advances in technology have continued, and air quality has experienced the whimsies of both El Nino and La Nina. California citizens have elected a new governor and defeated a $218 million per year clean air initiative. California's Cleaner Burning Gasoline was introduced in the state, producing an overnight 15 percent reduction in ozone-forming emissions; however, during the two years that followed the fuel's introduction, MTBE, a fuel additive used by refineries to satisfy federal oxygenate requirements, has been found to be contaminating the ground water. Implementation of an enhanced motor vehicle inspection and maintenance program is under way, providing assurances of further emission reductions and greater fairness to less economically advantaged individuals.

In 1997, U.S. EPA adopted new standards for ozone and fine particulate matter, and proposed a regional haze regulation which awaits final approval. ARB, air districts, and California stakeholders took prompt steps -- including an extensive series of stakeholder forums -- to determine how best to go about addressing each of these air quality challenges. In addition, California air quality managers and stakeholders have redoubled their efforts to work with U.S. EPA to achieve a more workable integration of state and federal permitting and

enforcement programs.

Air quality managers continue to work with their stakeholders to define research priorities and to meet essential research needs. Continued emphasis has been placed on a list of concerns which includes developing a better understanding of source emission profiles, including stationary and mobile particulate matter sources and emissions, and exhaust emissions from diesel powered engines; a more precise familiarity with the behavior of air pollution, including transport and air quality modeling; on further development of new low emission vehicles, such as LEV II and heavy duty engines; and evaluation of control technologies, including test methods for motor vehicles and stationary sources. In 1998, Governor Wilson and the Legislature added over $25 million to ARB's budget to provide incentives for introduction of cleaner heavy duty engine technologies and associated infrastructure.

Challenges, Today and Tomorrow

Overall, the quality of the air Californians breathe today is dramatically and measurably better than it was just 18 years ago. Violations of the Stage 1 (0.20 ppm) ozone standard in the South Coast Air Basin were reduced from 102 in 1980 to 12 in 1998, nearly a 90 percent improvement. Steady advancements in technology have reduced emissions despite growing population, increased vehicle miles traveled and an expanding economy. However, the job of air quality management in California is far from complete. In order for the Greater Los Angeles area to meet the federal ozone standards by the year 2010, the 1994 Ozone SIP identified the need for a 50% reduction in mobile source emissions. Since then, ARB has made substantial progress towards this goal.

Numerous challenges and opportunities are on the horizon. Reflecting on its experience implementing clean fuels and low emission vehicle programs, ARB will continue to set tough, challenging performance standards that utilize current -- or push new -- technology. ARB is positioned to continue to focus its efforts on those sources that are the biggest emitters. Rather than prescribe specific methods and control technologies, ARB has learned the value of encouraging strategic innovation to bloom. For instance, the emerging promise of fuel cell technology may offer emission reductions foreseen by few not long ago. The adoption of the LEV II vehicle emission standards on November 5, 1998, shows a continued capacity and willingness to track the pace of new technology development, and to evaluate and respect the marketplace -- assessing the readiness of each for the other.

Many of the air quality measures adopted by ARB in 1998**,** as well as those anticipated for adoption in 1999, hold much promise for achieving additional emission reductions to meet commitments made in California's 1994 State Implementation Plan. Additionally, these emission reductions will help California to achieve the new and more stringent federal standards for particulate matter, ozone and regional haze. California's new Low Emission Vehicle program -- LEV II-- will impose greater emission controls for light and medium duty trucks and sport utility vehicles, and will enhance evaporative emission requirements. ARB estimates this measure will result in an additional 58 tons per day of hydrocarbon and nitrogen oxide emission reductions in the year 2010 in the Greater Los Angeles area. Additional controls for on-road motorcycles and personal watercraft should achieve an additional 31 tons per day of smog forming emission reductions in the South Coast area in the year 2010.

The 1998 adoption by ARB of revisions to its cleaner burning gasoline regulation will allow fuel refiners more flexibility in the formulation of gasoline that will still meet ARB's stringent tailpipe and evaporative emission limits. Using this flexibility will require more of the same type of collaborative efforts that have occurred to date with alternative fuels among refiners and auto manufacturers. ARB is fuel and oxygenate neutral and is supporting efforts to remove the federal requirement for oxygenate so long as the gasoline meets performance specifications. Congressman Brian Bilbray and Senator Dianne Feinstein are sponsoring legislation which would bring about this change in law.

There are growing indications from both the automobile and fuels industries that fuel cells may be a significant part of the future. Again, we are likely to see a similar interdependence between fuels and emission reduction technologies. It turns out that fuel cells can operate on quite a number of fuels; however, just as catalytic converters are adversely impacted by lead and sulfur, fuel cells are adversely impacted by sulfur. It is likely that the next generation of emission controls will depend on further reduction of sulfur in fuels. ARB's fuel-cells group is working with affected stakeholders in this important arena, and is hopeful that the type of relationships and collaboration that have succeeded in the past will continue.

Air quality managers are working to better understand and manage PM2.5. By the middle of the next decade, the Air Resources Board and local air districts must develop State Implementation Plans (SIPs) to reduce unhealthful levels of fine particulates (PM2.5 -- less than 2.5 microns in size) in areas violating the new federal standards. California has previously developed a SIP for ozone and several districts have adopted SIPs for PM10 (particulate matter less than 10 microns). These plans -- which include measures for low emission vehicles, clean fuels, stationary source, and consumer products control measures -- provide dual benefits for public health by also reducing emissions that form PM2.5. The next step for cleaner air focusing on fine particles will require new technical information, data, and tools. Public understanding and support for the science underlying air quality plans is critical.

Additional state, local, and federal efforts aimed at better understanding PM sources, emissions, pollutant concentrations, health effects, and controls are underway. ARB is developing a technical work-plan to guide the agency's PM program. The plan is expected to be completed in the spring of 1999. The multi-year plan will briefly assess the current state of knowledge, identify information needs, and lay out a plan of action to meet those needs. ARB will coordinate its technical efforts with the local air districts and build on the results of ongoing research.

A critical first step in California's technical work on PM2.5 is deploying a statewide network of federally-approved PM2.5 monitors. ARB submitted California's PM2.5 Monitoring Network Plan to U.S. EPA in July, 1998. The plan describes the intended PM2.5 monitoring network, including: 1) Monitoring site locations; 2) Types of samplers at each site; and 3) Other site parameters such as spatial scale and sampling methodologies. The monitoring network plan covers mid 1998 to mid 1999. An annual update in 1999 will address any necessary changes. Key elements of the PM2.5 monitoring network are what it will cost and how it will be paid for. Working with California Congressman Jerry Lewis, ARB played a key role in helping to bring about U.S. EPA funding for a national PM2.5 monitoring network. That network will include 78 monitoring sites in California beginning in early 1999. Five analytical laboratories will also be funded throughout the state.

Maintaining a strong, technically capable workforce is essential. In a state as diverse as California, the need for a similarly diverse range of specifically tailored emission control programs will continue. California's mobile and stationary source control programs are the product of some of the finest scientists, technicians, and automotive engineers in the world. To meet the looming challenges of even stricter health-based standards and a growing economy, California will need to hold those human resources dear, while adding to and drawing from their ranks the men and women with the training and the vision to steer the system through the generation ahead.

Further scientific research, coupled with the first hand knowledge gained from ongoing empirical studies, will be needed to help identify and frame the technologies on which the control measures of the future will rely. Population growth, changes in the economy and in consumer behavior, together with the natural human desire for a healthier environment, will increase pressures on future air quality planners to implement new programs. Air quality managers will need to continue to devise innovative and effective ways to work collaboratively with individuals, civic leaders, environmentalists and the business community. Continuous improvements in the current managerial system will link past successes with newer approaches such as market based incentives for achieving clean air goals.

Positioning for the Future

By all accounts, the 1996 Air Quality Stakeholders Visioning Forums proved a worthwhile experience in planning for the future. Inevitably, lively -- sometimes vigorous -- debate characterizes some of the day-to-day interaction among stakeholders and between them and regulators. During the forum process, this was predictably most evident during the initial small group sessions, when each participant was asked to list strengths and weaknesses of the present system. But as the day progressed and participants worked their way through the remainder of the day's established agenda, many day-to-day adversaries began to take a longer view as they found they held common hopes for the future -- and common concerns over how best to approach it. And more than a few stakeholders reported developing a new appreciation of the range of usually thoughtful and considered -- but often quite diverse -- perspectives.

Perhaps one of the most important outcomes that emerged from the forum series was simply a reminder to all participants that, in spite of all the steps we might take today to maintain an ideal air quality management system, the world we live in will continue to change and present us with new and often unforeseen realities -- both challenges and opportunities. California's current air quality management system is a product of the inevitable economic, technological, social, and political pressures and paradigm shifts of the past generation. As the rate of change -- especially in technology -- accelerates, another decade or two could render much of today's system obsolete. The system's managers must anticipate these potentially dramatic shifts, monitor their development, and plan to deal in a strategic and systematic manner with those which seem likely to materialize.

With the encouragement of our stakeholders, ARB and CAPCOA look forward to continuing a regular, stakeholder-based strategic visioning process. At this writing, efforts are under way to conduct follow-up stakeholder program satisfaction surveys which will endeavor to determine how well ARB and air districts are responding to the themes of key importance identified during the 1996 visioning forums. Air quality managers will use the results of the survey to continue to

fine-tune air programs as well as to help decide how to design and when to conduct the next round of stakeholder visioning forums.

California air quality managers have in large part incorporated what they heard from stakeholders in 1996 into their strategic planning and program implementation efforts. They have redoubled their efforts to assess the effectiveness of their programs by improving emission inventory estimates and expanding air quality monitoring and modeling efforts. They have adopted, or incorporated into their regulatory calendars, control measures aimed at sources with the greatest proportionate emission contributions by adopting regulatory measures dealing with such initiatives as California's second generation low emission vehicle program (LEV II), heavy duty diesels, and personal watercraft. In addition, they have developed performance measures for assessing stakeholder program satisfaction, stakeholder involvement, and customer satisfaction. An important challenge for the future will be to continue the evaluation of program effectiveness, both internally and by listening to the views of our stakeholders.

While California has made remarkable progress in its reach for clean air, large challenges remain. Working together with air quality regulators, California stakeholders have become essential elements of our clean air program. Ultimately, as large corporations and as individual citizen-customers, they pay the bills, adapt to the regulations and reap the rewards of clean, healthful air. By the nature of our economic and political system, stakeholders have specific and often conflicting interests to pursue. To the extent the regulatory process is accessible, open, predictable and welcoming of their participation, the process retains its authority and stakeholders continue to help to bring about the most scientifically sound and cost effective control strategies feasible. They remain committed to improving science, to streamlined and efficient regulatory processes and to reduced costs.

But processes such as the visioning forums provide the vast majority of stakeholders with a context that is broader than their obligations to their immediate constituencies. This common frame of reference provides each with an awareness that they are participants in the governance of what is a larger whole -- the nation-state of California -- forever optimistic, growing and challenging. To sustain the public support -- indeed the political will -- to complete the considerable challenges ahead, air quality managers will continue to reach out to and involve their stakeholders in program efforts to maintain the most inclusive, direct, equitable, and workable air quality control strategies that exist in the world today. The challenges which lie ahead require no less, of regulator and stakeholder.

Appendix A

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Appendix B

California's Air Quality History
Key Events

1930	**California's population is less than 6 million people. Total registered vehicles in California reaches 2 million.**
	Meuse Valley, Belgium, air inversion results in 60 dead and thousands sick from exposure to industrial air emissions.
1938	Sulfur Dioxide and Dust Fall Air Sampling stations are set up in the U.S. under the Federal Works Progress Administration.
1939	World War II Begins -- Explosion of California's population soon to occur to meet the needs of the war.
1940	**California's population reaches 7 million people. Number of registeredvehicles in California approaches 2.8 million and the total vehicle miles traveled (VMT) is 24 billion.**
1943	First recognized episodes of smog occur in Los Angeles in the summer of 1943. Visibility is only three blocks and people suffer from smarting eyes, respiratory discomfort, nausea, and vomiting. The phenomenon is termed a “gas attack” and blamed on a nearby butadiene plant. The situation does not improve when the plant is shut down.
1945	World War II Ends -- Urban sprawl begins to take root in much of the U.S.
	The City of Los Angeles begins its air pollution control program, establishing the Bureau of Smoke Control in its health department.
1946	Raymond R. Tucker studies the Los Angeles area’s smog problem and recommends that county-wide collaboration is needed.
1947	**June 10, 1947, California Governor Earl Warren signs into law the Air Pollution Control Act, authorizing the creation of an Air Pollution Control District in every county of the state.**
	The Los Angeles County APCD is established. It is the first of its kind in the nation.
	California officially adopts the Ringelmann System, which measures the opacity of smoke arising from stacks and other sources.
1948	Donora, Pennsylvania, air pollution episode kills 20 people and numerous animals, and half of the town's 12,000 residents become ill due to uncontrolled emissions from industrial facilities.

1950 **California's population reaches 11 million people. Total registered vehicles in California exceed 4.5 million and Vehicle Miles Traveled (VMT) is 44.5 billion.**

More than 100 electric transit systems are replaced with buses in 45 U.S. cities including Los Angeles.

California Rule 50A passed, limiting smoke based upon the Ringelmann System.

1952 Over 4000 deaths attributed to "Killer Fog" in London, England.

Dr. Arie Haagen-Smit discovers the nature and causes of photochemical smog. He determines that nitrogen oxides and hydrocarbons in the presence of ultraviolet radiation from the sun forms smog (a key component of which is ozone).

1953 Los Angeles County starts "Smoke School Program" for black smoke, beginning the standardization of "Visible Emission Programs" nationwide.

Fuel switching from coal to natural gas implemented throughout much of the U.S. and England. Noticeable reduction in particulate levels occurs.

1955 Federal Air Pollution Control Act of 1955 is enacted, providing for research and technical assistance and authorizing the Secretary of Health, Education and Welfare to work towards a better understanding of the causes and effects of air pollution.

The Bay Area APCD is established. It includes the counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, and portions of Solano and Sonoma counties.

Los Angeles County Motor Vehicle Pollution Control Laboratory begins within the Los Angeles APCD.

Bureau of Air Sanitation is formed within the State Department of Public Health.

1956 “Killer Fog” envelopes London, England, resulting in 1000 deaths above normal.

Interstate Highway Act of 1956 passed, paving the way for increased highway construction.

1959 California enacts legislation requiring the state Department of Public Health to establish air quality standards and necessary controls for motor vehicle emissions.

1960 **California's population reaches 16 million people. Total registered vehicles approach 8 million and VMT is 71 billion.**

The Motor Vehicle Pollution Control Board is established. Primary function is to test and certify devices for installation on cars for sale in California.

Federal Motor Vehicle Act of 1960 is enacted. Requires federal research to address pollution from motor vehicles.

1961 The first automotive emissions control technology in the nation, Positive Crankcase Ventilation (PCV), is mandated by the California Motor Vehicle Pollution Control Board to control hydrocarbon crankcase emissions. PCV systems evacuate blowby gases from the crankcase and re-burn them with the fresh air and fuel mixture in the cylinders.

1962 Rachel Carson's "Silent Spring" is published. It brings to public attention a stunning awareness of the disruptive impact humans have upon the earth's fragile ecosystems.

1963 PCV Requirement of 1961 goes into effect on domestic passenger vehicles for sale in California.

First Federal Clean Air Act of 1963 enacted. Empowers the Secretary of the federal Health, Education, and Welfare to define air quality criteria based on scientific studies. Provides grants to state and local air pollution control agencies.

1964 Chrysler exhaust control system is approved by the Motor Vehicle Pollution Control Board. Four other independent companies also received approvals.

1965 **Ozone:** Reliable measurements of ozone concentrations begin to be recorded. The maximum one-hour ozone concentration for this year in the South Coast Air Basin is 0.58 parts per million.

Federal Clean Air Act of 1963 is amended by the Motor Vehicle Air Pollution Control Act of 1965. Direct regulation of air pollution by the federal government is provided for, and the Department of Health, Education, and Welfare is directed to establish auto emission standards.

1966 Auto tailpipe emission standards for hydrocarbons and carbon monoxide are adopted by the California Motor Vehicle Pollution Control Board. They are the first of their kind in the nation.

California Highway Patrol begins random roadside inspections of vehicle smog control devices.

1967 California Air Resources Board is created from the merging of the California Motor Vehicle Pollution Control Board and the Bureau of Air Sanitation and its Laboratory. Enacting legislation is the Mulford-Carrell Air Resources Act, signed into law by governor Ronald Reagan.

Federal Air Quality Act of 1967 is enacted. Establishes framework for defining "air quality control regions" based on meteorological and topographical factors of air pollution. Allows the State of California a waiver to set and enforce its own emissions standards for new vehicles based on California's unique need for more stringent controls.

1968 Dr. Arie J. Haagen-Smit is appointed Chairman of the Air Resources Board by Governor Reagan. First meeting of the State ARB is held in Sacramento on February 8, 1968.

Santa Cruz and Monterey Counties combine to form the Monterey County Unified Air Pollution Control District.

1969 First state Ambient Air Quality Standards are promulgated by California for total suspended particulates, photochemical oxidants, sulfur dioxide, nitrogen dioxide, and carbon monoxide.

1970 **California's population reaches 20 million people.** Total registered vehicles exceed 12 million and VMT is 110 billion. Statewide average for NO_x emissions per vehicle (new and used) are 5.3 g/mile; per vehicle for hydrocarbons are 8.6 g/mile. Cumulative California vehicle emissions for nitrogen oxides and hydrocarbons are about 1.6 million tons/year.

Ozone: The South Coast Air Basin's maximum one-hour ozone concentration recorded is

0.58 parts per million, which is nearly 5 times greater than the health-based national standard of < 0.12 ppm that will be adopted in ‘71.

1970 Backyard burning is banned in selected areas of California.

National Environmental Protection Act (NEPA) signed.

U.S. Environmental Protection Agency (U.S. EPA) created to protect all aspects of the environment.
The first Earth Day held April 22, 1970.

Federal New Source Performance Standards for opacity are published.

The Federal Clean Air Act of 1970 is enacted. It serves as the principal source of statutory authority for controlling air pollution. Establishes basic U.S. program for controlling air pollution.

1971 ARB adopts the first automobile nitrogen oxide standards in the nation.

Federal EPA promulgates National Ambient Air Quality Standards for particulates, photochemcial oxidants (including ozone), hydrocarbons, carbon monoxide, nitrogen dioxide and sulfur dioxide.

1972 California submits its State Implementation Plan (SIP) to U.S. EPA. It is rejected.

ARB adopts guidelines to control agricultural burning.

1973 OPEC Oil Embargo results in rising fuel costs, the use of smaller, more fuel efficient automobiles, more cost conservative use of fuel by industry, and corresponding lower air emissions.

1975 **Ozone:** The South Coast Air Basin’s maximum one-hour ozone concentration recorded is 0.39 parts per million. The area exceeds Stage 1 Smog Alerts (0.20 ppm ozone) on 118 days this year.

First Two-Way Catalytic Converters come into use as part of ARB’s Motor Vehicle Emission Control Program.

California Air Pollution Control Officers Association (CAPCOA) created.

EPA Working Group established to develop strategies for State Implementation Plan activities.

1976 The regional South Coast Air Quality Management District is formed. It includes portions of Los Angeles, Orange, Riverside, and San Bernardino counties.

The Toxic Substance Control Act is established by Congress in response to an increasing awareness of toxic substances used by industry.

ARB limits lead in gasoline.

Volvo introduces 1977 year car billed as "Smog-Free". Features the first Three-Way Catalytic Converter to control hydrocarbons, nitrogen oxides, and carbon monoxide.

1977 Federal Clean Air Act Amendments of 1977 enacted. Requires review of all National

Ambient Air Quality Standards by 1980.

1980 **California population reaches 24 million people. Total registered vehicles surpasses 17 million and VMT is 155 billion. Statewide average for NO_x emissions per vehicle are 4.8 g/mile; per vehicle for hydrocarbons are 5.5 g/mile. Cumulative California vehicle emissions for nitrogen oxides and hydrocarbons remain at 1970 levels of 1.6 million tons/year despite a rise of 45 billion in VMT over those ten years.**

Ozone: The South Coast Air Basin's maximum one-hour ozone concentration recorded is 0.49 parts per million. The area exceeds Stage 1 Smog Alerts (0.20 ppm ozone) on 102 days this year. This is an improvement of 16 days since 1975.

1980's Compliance testing performed by ARB on autos in use to determine whether they continue to comply with emission standards as they age. This is a strong incentive for manufacturers to develop more durable emission control equipment to avoid the risk of recall.

1984 California Smog Check Program goes into effect to identify vehicles in need of maintenance and to assure the effectiveness of their emissions control systems on a biennial basis.

AB 1807 Toxic Air Contaminant (TAC) bill becomes effective.

1985 **Ozone:** The South Coast Air Basin's maximum one-hour ozone concentration recorded is 0.39 parts per million. The area exceeds Stage 1 Smog Alerts (0.20 ppm ozone) on 83 days this year, an improvement of 35 days since 1975.

1988 California Clean Air Act is signed by Governor Deukmejian. Sets forth the framework for how air quality will be managed in California for the next 20 years.

ARB adopts regulations effective on 1994 model cars requiring that they be equipped with on-board computer systems to monitor emission performance and alert owners when there is a problem.

ARB adopts new standards for cleaner diesel fuel, resulting in a reduction of diesel particulate emissions by approximately 14 tons/day, 80 tons/day less sulfur dioxide and 70 tons/day nitrogen oxide emissions. Diesel busses and trucks are a major source of NO_X.

1990 **California's population reaches 30 million people. Total registered vehicles reaches 23 million and VMT is 242 billion. Statewide average for NO_x emissions per vehicle are 3.0 g/mile; per vehicle for hydrocarbons are 2.7 g/mile. Cumulative California vehicle emissions for nitrogen oxides and hydrocarbons are about 1.4 million tons/year. This is 200,000 tons/year less than in 1980 despite a rise of 87 billion in VMT.**

Ozone: The South Coast Air Basin's maximum one-hour ozone concentration recorded is 0.33 parts per million. The area exceeds Stage 1 Smog Alerts (0.20 ppm ozone) on 42 days this year, an improvement of 41 days since 1985.

ARB approves standards for Cleaner Burning Fuels and Low and Zero Emission Vehicles.

The Clean Air Act Amendments of 1990 are signed into law by President George Bush. They rely largely on elements of the California Clean Air Act, and require a number of new programs aimed at curbing urban ozone, rural acid rain, stratospheric ozone, toxic air pollutant emissions and vehicle emissions, and establishes a new, uniform national permit system.

1992 Phase I California Cleaner Burning Gasoline (CBG) comes to market. The result is 220

tons less ROG released every day (6% reduction), and elimination of the use of lead in gasoline. In November of the same year, ARB requires addition of oxygenates to gasoline to cut CO
emissions by 10%.

1993 California Diesel Fuel comes to market.

SCAQMD adopts Regional Clean Air Incentives Market (RECLAIM) program for NO_x and SO_x.

1994 U.S. Court orders U.S. EPA to develop Federal Implementation Plan (FIP) for numerous non-attainment areas in California.

California SIPs the FIP with submittal of more cost effective State Implementation Plan to U.S. EPA.

Smog Check II signed into law by Governor Wilson following lengthy negotiations with the federal EPA, designed to meet the requirements of the Federal Clean Air Act as amended in 1990. This program targets vehicles which pollute at least 2 to 25 times more than the average vehicle and requires repairs and re-testing of offending vehicles.

1995 Total registered vehicles reaches 26 million and VMT is 271 billion. Statewide average for NO_x emissions per vehicle are 2.2 g/mile; per vehicle hydrocarbons are 1.8 g/mile. Cumulative California auto emissions for nitrogen oxides and hydrocarbons are about 1.1 million tons/year, a 31% reduction compared 1970 levels, despite a 147% increase in VMT from 1970 levels. Statewide averages for nitrogen oxide and hydrocarbon emissions per vehicle reduced respectively by 58% and 80% from 1970 levels.

Ozone: The South Coast Air Basin's maximum one-hour ozone concentration recorded is 0.26 ppm, 55% less than in 1965. The area exceeds Stage 1 Smog Alerts (0.20 ppm ozone) on 14 days this year. This is an improvement of 104 days compared to 1975.

1996 **The South Coast Air Basin's maximum one-hour ozone concentration recorded is 0.24 ppm, a 59% improvement from 1965. The area exceeds Stage 1 Smog Alerts (0.20 ppm ozone) on 7 days this year. This is an improvement of 111 days, or a 94% reduction as compared to 1975.**

Big seven automakers commit to manufacture and sell Zero Emission Vehicles.

California Phase II Cleaner Burning Gasoline (CBG) comes to market. CBG reduces lung-damaging ozone and ozone precursors by 300 tons/day, as well as reducing airborne toxic chemicals like benzene that can cause cancer. This is equivalent to taking 3.5 million cars off the road.

California's State Implementation Plan (SIP) for ozone is approved by U.S. EPA on September 26, 1996.

1997 Antelope Valley Air Pollution Control District is formed. It includes areas formerly in the South Coast AQMD.

The South Coast AQMD experiences only 1 stage one ozone alert.

1998 The Honda Accord EX and the Mazda Protégé become the first two gasoline powered automobiles to meet the Ultra-Low Emission Vehicle (ULEV) standards sold in California.

Cal/EPA and Canada's Environment Ministry sign a Memorandum of Understanding recognizing each other's environmental technology certification programs.

ARB introduces several waves of "black box" emission reductions, including limitations on emissions from personal watercraft and two-stroke marine engines.

ARB identifies diesel particulate exhaust as a Toxic Air Contaminant.

Appendix C

California Air District Resource Directory

AMADOR COUNTY APCD
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Burn Line: (209) 223-6246

ANTELOPE VALLEY APCD
(NE portion of Los Angeles County)
43301 Division St., Ste. 206
P.O. Box 4409
Lancaster, CA 93539-4409
APCO - Charles L. Fryxell
Deputy APCO - Eldon Heaston
Reg. Development - Eldon Heaston
Surveillance - Bob Ramirez
Stationary Source - Chris Collins
Compliance - Doug Macauley
Business Assistance - Cynthia Ravenstein
Public Information Officer - Violette Roberts
Administrative Services - Scott Duncan
Website: http://www.mdaqmd.ca.gov
E-Mail: fwohosky@mdaqmd.ca.gov
Phone: (805) 723-8070
Fax: (805) 723-3450

BAY AREA AQMD
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San Mateo, Santa Clara, W portion of Solano,
S portion of Sonoma counties)
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San Francisco, CA 94109-7714
APCO - Ellen Garvey
Phone: (415) 749-4971
Deputy APCO - Peter Hess
Phone: (415) 749-4943
Enforcement - Jim Guthrie
Phone: (415) 749-4787
Fiscal/Admin - Vacant
Phone: (415) 749-4955
Legal - Robert Kwong
Phone: (415) 749-4750
Permits - Bill de Boisblanc
Phone: (415) 749-4704
Business Assistance - Vicki Dvorak
Phone: (415) 749-4764
Tech. Services - Gary Kendall
Phone: (415) 749-4932
Plan./Research - Tom Perardi
Phone: (415) 749-4667
Public Info. - Teresa Lee
Phone: (415) 749-4900
Complaint Line
Phone: (800) 334-6367
Website: http://www.baaqmd.gov
E-Mail: webmaster@baaqmd.gov
Phone: (415) 771-6000
Fax: (415) 928-8560

BUTTE COUNTY AQMD
(all of Butte County)
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Fax: (530) 891-2878

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IMPERIAL COUNTY APCD
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MODOC COUNTY APCD
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NORTHERN SIERRA AQMD
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Strategic Planning - Karen Wilson
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Phone: (619) 694-3313
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Phone: (805) 961-8800
Daily Air Quality Reports
Phone: (805) 961-8804
Newsletter Subscriptions
Phone: (805) 961-8867
Other Subscriptions (rules, notices)
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E-Mail: apcd@apcd.santa-barbara.ca.us
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Assistant APCO - Eldon Beck
Specialist - Jason Davis
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SOUTH COAST AQMD
(Los Angeles County except for
Antelope Valley APCD, Orange County,
W portion of San Bernardino and
W portion of Riverside counties)
21865 E. Copley Dr.
Diamond Bar, CA 91765-4182
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Stationary Sources Rules & Compliance - Vacant
Planning & Technology Advancement - B. Wallerstein
Public Affairs & Local Govt. Assis. - Lupe Valdez
Chief Scientist - Dr. Chung S. Liu
Public Advisor - La Ronda Bowen
Business Assistance - Lee Lockie
Technical Support Services - Vacant
Government Affairs/Media - Tom Eichhorn
Fiscal - Rick Pearce
Counsel - Peter Greenwald
Chief Prosecutor - Vacant
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TEHAMA COUNTY APCD
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Deputy APCO and Business Assistance - Mike Waugh
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Appendix D

Air District Map

(http://www.arb.ca.gov/emisinv/maps/statemap/dismap.htm)

Appendix E

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Individual Air Districts
See Appendix C
Call ARB Helpline or
See ARB Web PageListed Above